THE pebble PARTNERSHIP

April 29, 2014

Via E-Mail
Dennis J. McLerran
Regional Administrator
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

Dear Mr. McLerran:

I am writing in response to your letter dated February 28, 2014[1] stating that the U.S. Environmental Protection Agency ("EPA" or "Agency") will proceed under Section 404(c) of the Clean Water Act ("CWA") to determine whether to issue a veto for, or place conditions on, the proposed mining of the Pebble deposit in Southwest Alaska ("Pebble Project") prior to the submission of a permit application to the U.S. Army Corps of Engineers ("Corps").

Overview

This Response covers the following main points:

[1] *See* Letter from Dennis J. McLerran, Regional Administrator, Region 10, EPA to Thomas Collier, Joe Balash and Col. Christopher D. Lestochi (Feb. 28, 2014) [hereinafter Feb 28, 2014 EPA Letter].

Introduction

EPA is acting beyond its legal authority and should immediately rescind its letter and revert to the time-tested administrative process under Section 404. Congress only granted EPA limited authority to veto permits for specified disposal sites under Section 404(c), not to broadly veto any development within a large region prior to the submission of an application. This restricted authority was by Congressional design. Until a permit application is filed, and the Corps' permit review is completed, there is insufficient information on which to base a Section 404(c) decision.

Initiating a preemptive veto process will short-circuit the important regulatory and public review steps included in the CWA 404 permit process, including the Corps' alternatives analysis, the State (of Alaska) Section 401 water quality certification, and the National Environmental Policy Act ("NEPA") review process.

By proceeding as proposed, the Section 404(c) process must necessarily be based on EPA's *Assessment of Potential Impacts on Salmon Ecosystems of Bristol Bay, Alaska* ("Assessment"),[2] which does not provide a legitimate basis for making a regulatory decision on the Pebble Project. By EPA's own admission, the Assessment was never intended as a decision document for a regulatory decision, in part because it assesses only speculative mine development scenarios rather than an actual permit proposal.[3] Moreover, the flaws pointed out in the peer review process and stakeholder review submissions demonstrate that the Assessment is of questionable scientific value. Rather than attempting to act preemptively based on this flawed record, EPA should await a permit application and an Environmental Impact Statement ("EIS") under NEPA. Allowing this statutory process to proceed as intended poses no risk of environmental harm, since mine construction could not proceed without a Corps permit.

Acting preemptively without a specific proposal also indicates that this veto process is not about a particular permit or project, but instead is based on a broader goal of precluding any development that could impact the Bristol Bay watershed. By acting preemptively rather than waiting for a specific application, EPA is effectively precluding any development within a large swath of state land, which violates the statutory compromise established in the Alaska Statehood Act and the Alaska National Interest Lands Conservation Act ("ANILCA"). Congress adopted both statutes to balance Alaska's economic interests in its land with environmental conservation efforts. EPA cannot use its authority under Section 404(c) of the CWA to undermine Congress's explicit intent to protect Alaska's interests in its state lands.

These legal infirmities can be avoided if EPA follows its past precedent and established procedures and allows the sponsors of the Pebble Project to submit a Section 404 permit application and the Corps to review the application, including under NEPA's EIS process, before determining whether Section 404(c) will be triggered for the Pebble Project.

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[2] *See* EPA, *Assessment of Potential Impacts on Salmon Ecosystems of Bristol Bay, Alaska*, EPA 910-R-14-001A-C (Jan. 2014) [hereinafter *Assessment*].

[3] *Assessment* at 35 ("[T]his assessment is based on available data and is intended as a background scientific document rather than a decision document.").

Finally, we note that your February 28th letter invites the Pebble Limited Partnership ("PLP") to provide information "to demonstrate that no unacceptable adverse effects to aquatic resources would result from discharges associated with mining the Pebble deposit . . . ."[4] However, it is inappropriate for EPA to attempt to place this burden on PLP before a mine proposal has been fully designed, engineered and proposed to the Corps. An analysis of the potential impacts of the Project can only be achieved after the rigorous, exhaustive CWA permit review and associated NEPA EIS process to be undertaken by the Corps, in conjunction with the State. To expect a proponent to do so in the absence of a proposed development plan (including detailed engineering design and project and site-specific mitigation) and on an accelerated timeline under EPA's 404(c) process is unreasonable, unlawful, and inappropriate. We believe it is tantamount to denying due process by foreclosing opportunity for science to be objectively presented, reviewed and assessed.

Discussion

I. Section 404(c) Does Not Authorize EPA to Take Preemptive Action Against the Pebble Project

A. Congress Only Authorized EPA to Veto or Restrict Specific Permit Proposals

Under Section 404 of the CWA, Congress has delegated to the Corps authorization to "issue permits, after notice and opportunity for public hearings for the discharge of dredged or fill material into the navigable waters at *specified* disposal sites."[5] EPA, on the other hand, was delegated a much narrower window of authority under Section 404(c). As the D.C. Circuit explained, Section 404(c) "affords EPA two distinct (if overlapping) powers to veto the Corps' specification: EPA may (1) 'prohibit the *specification* (including the withdrawal of *specification*) of any *defined area* as a disposal site' or (2) 'deny or restrict the use of any *defined area* for *specification* (including the withdrawal of the *specification*).'"[6] And EPA may take such action only after determining "that the discharge of *such materials* into *such area* will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas."[7]

The legislative history of the CWA further illuminates Congress's intent to grant authority to EPA only to veto or restrict specific disposal sites, as set forth in a permit application. Originally, the Senate bill proposing the regulation of dredge or fill activities delegated to EPA complete authority to issue permits, as it does for discharges of other pollutants under the CWA. A subsequent House amendment, however, proposed delegating the permitting authority to the Corps. The House and Senate later agreed to allocate decisions on dredge or fill projects between the Corps and EPA. The Senate Debate on the Conference Report explained that the Committee found that EPA "should have the veto over the *selection of the site for*

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[4] Feb 28, 2014 EPA Letter at 2.
[5] 33 U.S.C. § 1344(a) (emphasis added).
[6] *Mingo Logan Coal Co. v. EPA*, 714 F.3d 608, 614 n.2 (D.C. Cir. 2013) (quoting 33 U.S.C. § 1344(c)) (emphasis added).
[7] 33 U.S.C. § 1344(c) (emphasis added).

dredged soil disposal and over any *specific soil* to be disposed of in any *selected site*."[8] Under the enacted bill, EPA's duties to evaluate the permit application would not be duplicative of the Corps' duties "because *the permit application* transmitted to [EPA] for review will set forth *both the site to be used and the content of the matter of the soil to be disposed*. The Conferees expect the Administrator to be expeditious in his determination as to whether a site is acceptable or if specific soil material can be disposed of at such site."[9] The House Debate on the Conference Report similarly provided that "it is expected that disposal site restrictions or prohibitions *shall be limited to narrowly defined areas*".[10]

Thus, Congress only granted EPA authority to prohibit or restrict specified disposal sites under Section 404(c), not to set aside areas of land in advance of any permit application. As the Supreme Court held in *Coeur Alaska Inc. v. Southeast Alaska Conservation Council*, the CWA "gives EPA authority to 'prohibit' *any decision by the Corps* to issue a permit for *a particular disposal site*."[11] Despite this clear statutory delineation of the respective roles of the two agencies, EPA has now asserted authority to act before a permit application has even been filed, thereby usurping the Corps' permit review authority and relegating the Corps to a secondary role as a "consulting" agency.[12]

Lastly, the CWA does not authorize EPA to begin the Section 404(c) veto process based solely upon speculation about the size of the project or the resources that may be impacted. The CWA authorizes EPA to take action under 404(c) only when EPA has demonstrated that a specific project will have "an unacceptable adverse effect."[13] EPA's regulations define an "unacceptable adverse effect" as an "impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas."[14] As discussed more fully below in Section III, EPA has not demonstrated effects of these types because the Agency has been unable to quantify any impacts of its hypothetical mines on any Bristol Bay fishery – commercial, subsistence or sport.[15]

Here, EPA cannot meet its statutory burden of finding that the Pebble Project will have an "unacceptable adverse effect" because a permit application has not yet been submitted. The

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[8] Senate Consideration of the Report of the Conference Committee, *reprinted in* 1 A Legislative History of the Water Pollution Control Act Amendments of 1972, at 161, 177 (1973) (emphasis added).
[9] *Id.* (emphasis added).
[10] Conference Report—House Debate (Oct. 4, 1972), *reprinted in* 1 A Legislative History of the Water Pollution Control Act Amendments of 1972, at 236 (1973) (emphasis added); *see also* H.R. 11896 (Mar. 27, 1972), in 1A Legislative History of the Water Pollution Control Act Amendments of 1972, at 325 (1973) ("It is expected that until such time as feasible alternatives methods for disposal of dredged or fill material are available, unreasonable restrictions shall not be imposed on dredging activities essential for the maintenance of interstate and foreign commerce.").
[11] 557 U.S. 261, 274 (2009) (emphasis added). *See also Mingo Logan Coal,* 714 F.3d at 614 ("Subsection 404(c) authorizes the Administrator, after consultation with the Corps, to veto *the Corps' disposal site specification*.").
[12] *See* Feb. 28, 2014 EPA Letter at 2.
[13] 33 U.S.C. § 1344(c); *see also James City Cnty., Va. v. EPA*, 758 F. Supp. 348 (E.D. Va. 1990) ("EPA has not met its statutory duty of showing that the discharge necessary for the Ware Creek Reservoir will have an unacceptable adverse effect").
[14] 40 C.F.R. § 231.2(e).
[15] *See infra* Section III. E.

February 28, 2014 EPA letter insists that "mining the Pebble deposit will involve excavation of the largest open pit ever constructed in North America, completely destroying an area as large as 18 square kilometers and as deep as 1.24 kilometers."[16] Yet the sponsors of the Pebble Project have not proposed a specific mine project and the area of potential impact cannot be known until the location, scope and scale of the project is determined. It is axiomatic that EPA cannot determine whether the proposed Pebble Project will have an unacceptable adverse effect on the wetland ecosystem without a permit application outlining the specific location, size and characteristics of the project.

B. EPA Is Seeking to Impermissibly Expand Its Statutory Authority

Despite Congress's clear intention to narrow EPA's authority to review only the environmental effects of a particular permit action, EPA is attempting to usurp the Corps' authority by preemptively initiating the Section 404(c) process. In materials prepared for a briefing of former EPA Administrator Lisa Jackson, EPA staff outlined the advantages of "proactive" action under Section 404(c) prior to the submission of the Pebble Project application.[17] Specifically, the briefing document provides that "[a] proactive 404(c) will provide the regulated community clarity on what can and cannot be permitted allowing for more efficient and timely development of permitted projects."[18] Yet Congress did not delegate to EPA the authority to make that determination prior to the submission of a permit application and the Corps' review of that application. The CWA provides that the Corps, not EPA, "may issue permits . . . for the discharge of dredged or fill material into the navigable waters at specified disposal sites."[19] By preemptively instituting the 404(c) process pre-application, instead of assessing the environmental implications of a specific proposed permit action, EPA would effectively usurp the Corps' authority to review a permit application for a specific site. In the same briefing materials mentioned above, EPA acknowledged that the Agency was pushing the boundaries of its statutory authority, noting that there would be a "[l]itigation risk," that a preemptive veto had "[n]ever been done before in the history of the CWA," and that the preemptive veto "would result in "[i]mmediate political backlash."[20]

The briefing document also discusses using a preemptive Section 404(c) process as a mechanism for zoning watersheds, stating that the preemptive veto "[c]an serve as a model of proactive watershed planning for sustainability."[21] EPA's proactive use of Section 404(c) is an attempt to expand its statutory authority under CWA to land use planning, including of state, tribal, and private lands. However, Section 404(c) is not a broad watershed planning tool; it is very narrowly prescribed – EPA can veto a specific disposal site *only if* it can demonstrate unacceptable adverse effects to aquatic resources. Congress has not authorized EPA to engage in general watershed planning for sustainability. Instead, EPA has been delegated authority merely to determine whether a proposed mine as described in a permit application will have *unacceptable* adverse effects.

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[16] Feb. 28, 2014 EPA Letter, at 1.
[17] *See* Exhibit A, EPA, Bristol Bay 404(c) Discussion Matrix, HQ Briefing, at 1 (Sept. 8, 2010).
[18] *Id.*
[19] 33 U.S.C. § 1344(a).
[20] *See* Exhibit A, Bristol Bay 404(c) Discussion Matrix at 1.
[21] *Id.*

EPA's impermissible expansion of its authority to regulate zoning of watersheds is even more problematic considering that the State of Alaska has developed a comprehensive land use plan for the Bristol Bay region.[22] Drafted in 1985 and updated in 2005 following extensive public consultation, the Bristol Bay Area Plan for State Lands "determines management intent, land-use designations, and management guidelines that apply to all state lands in the planning area."[23] EPA's attempt to use the 404(c) process for "proactive watershed planning" in the Bristol Bay area will effectively preempt Alaska's plans for its state lands.

EPA's initiation of the Section 404(c) process prior to the submission of a permit application for a specific site within a regional area is unprecedented. EPA's briefing document explains that initiating the 404(c) process before a permit application has been submitted has "[n]ever been done before in the history of the CWA."[24] In the 13 out of 14 times that EPA has previously commenced the Section 404(c) veto process, a permit application *had already been filed* for a specific area for specific materials. In the sole instance where a permit application had not been submitted for a specific site, EPA determined that the application to be filed would be substantially similar to two prior applications for neighboring sites.[25] All three proposed locations were located in the Taylor Slough drainage area in Dade County, Florida.[26] The third site with the pending application was only approximately 312 acres.[27] EPA concluded that because all three locations "are essentially similar pieces of the East Everglades wetlands complex with similar ecological values . . . the initiation of one 404(c) action embracing all three tracts would be an efficient and appropriate way for the Federal government to address the serious environmental concerns."[28] Further, the Corps had indicated that it would grant the permit, so EPA had considerable information on the expected permit application as well as the Corps' likely response thereto before issuing a veto.[29] Here, there are no prior applications or Corps review on which EPA can rely to form a basis for initiating the veto process regarding the Pebble Project. Section 404(c) action is unauthorized here, where specific information from a permit application and Corps review is absent.

II. EPA Should Wait for the Corps' CWA and NEPA Review Prior to Invoking Section 404(c)

Consistent with its past practice under Section 404(c), EPA should wait for the Corps' review of a permit application and associated NEPA review before deciding whether to initiate the Section 404(c) veto process for the Pebble Project. The 404(c) process indisputably

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[22] *See* Alaska Department of Natural Resources, Bristol Bay Area Plan for State Lands (Apr. 2005), *available at* http://dnr.alaska.gov/mlw/planning/areaplans/bristol/.
[23] *Id.* at 1-1.
[24] *See* Exhibit A, Bristol Bay 404(c) Discussion Matrix at 1.
[25] Proposed 404(c) Determination to Prohibit, Deny, or Restrict the Specification of Use of Three East Everglades Areas as Disposal Sites; Notice and Public Hearing Announcement, 52 Fed. Reg. 38519 (Oct. 16, 1987).
[26] *Id.*
[27] *Id.* at 38520.
[28] *Id.*
[29] EPA, Final Determination of the U.S. Environmental Protection Agency's Assistant Administrator for Water, Concerning Three Wetland Properties (sites owned by Henry Rem Estate, Marion Becker, et. al. and Senior Corporation) for which Rockplowing I Proposed in East Everglades, Dade County, Florida, at 4 (June 15, 1988), *available at* http://water.epa.gov/lawsregs/guidance/wetlands/404c.cfm ("[T]he Corps had predisposed itself to issuing a permit authorizing rockplowing . . . in the supporting documentation for the permit . . .").

contemplates that an application would be submitted and reviewed by the Corps before the veto process would be initiated. The Corps' Section 404 review process, and the associated NEPA review, will provide a full record on the scope and potential impacts of the project, including project- and site-specific mitigation, with opportunities for EPA and public input. Both the Corps' permit review and the EIS will provide robust environmental impacts data and analysis based on the particulars set forth in the application, as well as vital stakeholder and public input. As EPA has admitted, the NEPA process would be more comprehensive and would address considerations beyond the scope of the Assessment. EPA should not attempt to initiate the veto process for this project before this permit-specific record has been developed.

A. EPA Should Not Take Any Action Until a Permit Application Has Been Submitted and Reviewed by the Corps

The Corps' Section 404 Permit Review Process involves a rigorous review of a project, including identifying the least environmentally damaging practicable alternative ("LEDPA"), as well as mitigation measures. To issue a Section 404 permit, the Corps must ensure that the activity complies with the EPA 404(b)(1) Guidelines, set forth in 40 C.F.R. Part 230. The purpose of the Guidelines is "to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material."[30] A dredge or fill action (1) must not "cause or contribute to significant degradation of the waters of the United States"; (2) must not cause or contribute to a water quality violation; and (3) must be in the public interest.[31] The project applicant is required to prepare a comprehensive 404(b)(1) analysis to provide the Corps with the necessary information to determine whether the Guidelines have been followed. If a project cannot demonstrate compliance with these guidelines, the 404 permit will be denied.

In order to meet this rigorous review, the Pebble Project permit application, when it is completed and filed, will include extensive information on the design and scope of the project, including detailed data on construction and operation plans and potential impacts. The permit application process will begin with pre-application consultations with the Corps, so that the applicant understands the specific information needed to provide a complete application. Based on those consultations, the applicant will develop extensive data to support the application. For example, the permit application will include:

- biological assessments;
- an environmental mitigation plan, including for wetlands and other aquatic resources;
- a cultural resources survey;
- a spill prevention, containment, and countermeasure plan;
- an environmental report and field study;
- a project schedule;
- environmental baseline documents;
- a conceptual draft reclamation/closure plan;

[30] 40 C.F.R. § 230.1(a).
[31] *Id.* § 230.10.

- a list of required permits; and
- an alternatives assessment report.

The application will provide detailed information about each of the Project's proposed locations for fill placement, including delineations of all aquatic features. The application will include a Construction, Mitigation, and Reclamation Plan ("CMRP"), which describes how the applicant would construct the project, restore affected aquatic features, and mitigate adverse impacts.

Once the application is submitted and deemed complete, the Corps is charged with review of the project, including whether "there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem . . . ."[32] "An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes."[33] This LEDPA review is at the heart of Section 404 permitting, as noncompliance with the LEDPA requirement is a sufficient basis for the Corps to deny the permit. As EPA scientists have admitted, and as discussed more fully below in Section III, the permitting and NEPA processes are considerably more detailed and comprehensive than the contents of the Assessment.[34]

Additionally, the Corps will evaluate if a discharge of fill material is prohibited because it "[c]auses or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard."[35] Under CWA § 401, the Corps cannot issue a permit or license for an activity that may result in a discharge to waters of the United States until the State or tribe where the discharge would originate has granted or waived Section 401 certification. A Section 401 water quality certification provides states and authorized tribes with an important opportunity to address the aquatic resource impacts of federally issued permits and licenses.[36] Alaska values its regulatory interest in the matter highly. In a recent letter to EPA's Inspector General, the Attorney General noted how Alaska "views with alarm the threat posed by a federal agency that can effectively preempt legitimate and lawful State regulatory authority over proposed activities on State lands.[37]

In sum, the 404(b)(1) Guidelines compliance process is managed by the Corps, but other resources agencies, including the State and tribes, have integral roles in the process. A preemptive veto would undermine the role and authority Congress assigned to these regulatory agencies. EPA should allow the Corps, State, and tribes to undertake the respective review processes assigned to them under the CWA. Moreover, EPA would not be forced to sit on the

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[32] *Id.* § 230.10(a).
[33] *Id.* § 230.10(a)(2).
[34] *See, e.g.*, EPA, Response to Peer Review Comments, at 221, *available at* http://www2.epa.gov/bristolbay/peer-review-process ("We agree that a more detailed assessment of direct and indirect impacts of mining to wildlife will have to be done as part of the NEPA and permitting processes.").
[35] 40 C.F.R. § 230.10(b)(1).
[36] The § 401 certification is just one aspect of the important role the State of Alaska will play in the permitting process. The state is a co-regulator of mining projects, along with EPA and the Corps, under a variety of federal and state programs, including water quality, fisheries and wildlife, solid waste disposal, air quality permits, cultural resources, and reclamation.
[37] *See* Exhibit B, Letter from Michael C. Geraghty, Attorney General, State of Alaska, to Arthur A. Elkins, Jr., Inspector General, EPA, at 1 (Feb. 3, 2014) [hereinafter Feb. 3 Attorney General Letter] (citing *Solid Waste Agency of N. Cook Cnty. v. U.S. Army Corps of Eng'rs*, 531 U.S. 159, 173-74 (2001).

sidelines until the Corps issued a decision on the permit application, but instead could be involved throughout the 404(b)(1) Guidelines review process. By working with the Corps, State, tribes and applicant through the 404 permit process, EPA may be able to address its concerns with the project without having to preemptively hijack the entire process. Finally, waiting for the NEPA process to develop in no way compromises EPA's statutory veto authority – EPA could still take action before a final permit is issued and any environmental impacts occurred.

B. EPA Should Not Take Any Action Until an EIS Has Been Prepared

In addition to its responsibilities under the CWA, the Corps must also comply with the requirements of NEPA,[38] which requires agencies to "take a hard look" at the potential impacts of a federal action.[39] Thus, pursuant to NEPA, the Corps will prepare an EIS once the permit application is filed. The EIS process will provide valuable information on the potential impacts of the Pebble Project permit proposal, including a comprehensive review of impacts to water quality, wetlands, and other aquatic resources. The EIS will also evaluate potential project- and site-specific mitigation measures, social and economic impacts, and alternatives. Integrated with the NEPA process will be the Endangered Species Act Section 7 consultation process, under which the Corps will consult with the services (FWS and/or NMFS) regarding the project's potential impacts to threatened or endangered species, likely culminating in a biological opinion.[40] All of this information is critical to a full understanding of the potential impacts of the Pebble Project, and goes well beyond the analysis undertaken by EPA as part of its Assessment.

The NEPA process also serves an important procedural role. EPA generally only takes action under Section 404(c) after the NEPA process for the proposed project, if applicable, has concluded.[41] Commenting on the draft and final EIS allows EPA to voice its concerns about the

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[38] 42 U.S.C. § 4321 *et seq.*

[39] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

[40] 16 U.S.C. § 1531 *et seq.*

[41] *See* Notice of Final Determination of the Assistant Administrator for Water Pursuant to Section 404(c) of the Clean Water Act Concerning the Proposed Yazoo Backwater Area Pumps Project in Issaquena County, MS, 73 Fed. Reg. 54398 (Sept. 19, 2008), *available at* http://water.epa.gov/lawsregs/guidance/cwa/dredgdis/upload/2008_09_19_wetlands_YazooFinalFedReg9-19-08.pdf (expressing numerous concerns when commenting on the Draft EIS in April 1982, the Final EIS in May 1983, the Draft Supplemental EIS in November 2003, the revised draft Wetland and Mitigation for the Draft Supplemental EIS in December 2005, and the Final Supplemental EIS in January 2008); Notice of Proposed Determination To Prohibit, Restrict, or Deny the Specification, or the Use for Specification, of an Area as a Disposal Site; South Platte River, 54 Fed. Reg. 36862 (Sept. 5, 1989), *available at* http://water.epa.gov/lawsregs/guidance/wetlands/upload/Two-Forks_PD.pdf (commenting on the final EIS in March 1998); EPA Region III, Final Determination of the U.S. Environmental Protection Agency's Assistant Administrator for Water Pursuant to Section 404(c) of the Clean Water Act Concerning the Proposed Ware Creek Water Supply Impoundment, James City County, Va, at 14-18 (July 10, 1989), *available at* http://water.epa.gov/lawsregs/guidance/wetlands/upload/WareCreekFD.pdf (reviewing the draft EIS and final EIS); Water Pollution Control; Final Determination Concerning the Proposed Lake Alma Recreational Lake Project on Hurricane Creek, Bacon County, GA, 54 Fed. Reg. 6749, 6750 (Feb. 14, 1989), *available at* http://water.epa.gov/lawsregs/guidance/wetlands/upload/LakeAlma404-c-FinalFRN-1989.pdf (EPA had commented on the final EIS); Notice of Final Determination of the Assistant Administrator for Water Pursuant to Section 404(c) of the Clean Water Act Concerning the Spruce No. 1 Mine, Logan County, WV, 76 Fed. Reg. 3126 (Jan. 19, 2011), *available at* http://water.epa.gov/lawsregs/guidance/cwa/dredgdis/upload/Spruce_FR_Notice_011911.pdf (EPA commented on the draft EIS and final EIS).

impacts of a particular project, as proposed by the applicant.[42] It also allows the Corps and applicant to respond meaningfully to EPA's stated concerns about the potential environmental impacts by amending the project or increasing mitigation. EPA should not attempt to substitute a Section 404(c) veto process for the more thorough process required by NEPA, which includes important public participation opportunities and a full evaluation of the potential impacts of the project, including social and economic impacts.

Many entities, including EPA and environmental organizations such as NRDC, have emphasized the importance of the NEPA process to government decision-making, including the fact that NEPA review can lead to mitigation that allows a project to move forward without unreasonable impacts on the environment. The NRDC states:

> NEPA is democratic at its core. In many cases, NEPA gives citizens their only opportunity to voice concerns about a project's impact on their community. When the government undertakes a major project such as constructing a dam, highway, or power plant, it must ensure that the project's impacts -- environmental and otherwise -- are considered and disclosed to the public. *And because informed public engagement often produces ideas, information, and even solutions that the government might otherwise overlook, NEPA leads to better decisions -- and better outcomes -- for everyone.* The NEPA process has saved money, time, lives, historical sites, endangered species, and public lands while encouraging compromise and cultivating better projects with more public support.[43]

EPA itself also often comments on the importance of a full and integrated NEPA review for Corps projects.[44] The Pebble Project should not be acted upon without the NEPA review process that NRDC, EPA and others consider the gold standard for environmental impact assessment.

The NEPA EIS process has been designed and implemented to facilitate public participation and the participation of multiple interested federal and state agencies, including EPA. The public, and EPA, would participate in developing the scope for an EIS as well as the

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[42] EPA has a clear statutory role in the NEPA process. Under Section 309 of the Clean Air Act, EPA is required to review and comment on all EISs prepared under NEPA. Under this authority, EPA reviews both draft and final EISs and provides feedback to the lead agency. If EPA determines that the agency's response to its comments is insufficient and still has objections to the final EIS, EPA can refer the final EIS to the Council on Environmental Quality ("CEQ").

[43] Natural Resources Defense Council, *Why Is the National Environmental Policy Act So Important?*, http://www.nrdc.org/legislation/nepa-success-stories.asp (last visited Apr. 25, 2014) (emphasis added).

[44] *See, e.g.*, EPA Region 10 Letter to ACOE Project Manager in Portland, OR (Apr. 5, 2012) ("Finally, we encourage the Corps to integrate environmental review and consultation requirements into a single NEPA process. For example, integrating the NEPA process with those tor permitting under Section 404 of the Clean Water Act and consultation under Section 106 of the National Historic Preservation Act would result in streamlined and consistent agency decision-making, enhanced public disclosure, and better predictability for the applicant."); EPA Region 10 Letter to ACOE Seattle District (Jan. 22 2013) (commenting that the Corps should consider a range of impacts and noting that "[t]he purpose of an EIS is both to provide decision makers with necessary information regarding potential environmental impacts before a decision is made and to inform the public debate.").

content of the EIS itself. Under CEQ regulations, federal agencies must "make diligent efforts to involve the public in preparing and implementing their NEPA procedures."[45] The agency proposing any action subject to NEPA must publish a Notice in the Federal Register to initiate the NEPA process and invite public comments on the scope of the issues to be addressed in the EIS, including through scoping meetings. Cooperating agencies must be identified to participate at the earliest possible time, including other federal agencies, state and local agencies, and Indian tribes. The draft EIS, which includes a detailed analysis of alternatives, must be published for further public comment. A full response to comments must be prepared before the final EIS is issued. This contrasts sharply with EPA's chosen 404(c) course, which the Agency itself has described as having "no real public discussion[;] public involvement is to comment, then sue if they have the resources."[46]

NEPA also provides that economic and social effects of a proposed action are to be assessed in an EIS. Specifically, the CEQ regulations provide: "[w]hen an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the environment."[47] In the case of a proposed mine development project, social and economic benefits are typically detailed in the draft and final EIS, including:

- Direct jobs associated with the development project;
- Training and employment opportunities for unemployed people living in the region;
- Indirect jobs in the local regions (state, national);
- Annual local payrolls;
- Annual capital and operating expenditures;
- Contracting, land development and capacity-building opportunities for Native Corporations and Tribal governments;
- Reduced costs of energy and transportation of goods for those living in the region (due to development of new project infrastructure;
- Impact on the national economy;
- State, federal, and local tax payments; and
- Royalty payments to government entities.

[45] 40 C.F.R. § 1506.6(a).
[46] Exhibit A, Bristol Bay 404(c) Discussion Matrix, at 2.
[47] 40 C.F.R. § 1508.14.

EPA admits that the Assessment does not attempt to measure considerations such as the economic benefits a project may have.[48] The fate of the Pebble Project cannot be rationally decided without consideration of the full social, economic and environmental impacts of the project, and this information will be developed through the NEPA process. Considering the potential benefits of a project is even more critical considering the dire economic circumstances in the region. Many of the villages near the Pebble Project have poverty levels of over a third of the population.[49] High unemployment levels have forced significant migration to Anchorage and other cities.[50] For example, the population of the Lake and Peninsula Borough declined 17% between 2000 and 2010, while the Bristol Bay Borough lost more than 23% of its population.[51] In several communities, schools have closed or are threatened with closure as a result of diminishing enrollment.[52] Consideration of the Pebble Project must take these local economic factors into account.

As the National Academy of Sciences/National Research Council ("NAS") advised the U.S. Congress, "The NEPA process is the key to establishing an effective balance between mineral development and environmental protection. The effectiveness of NEPA depends on the full participation of all stakeholders throughout the NEPA process." [53] NAS further stated,

> The Committee believes that the NEPA process and its various state equivalents provide the most useful and efficient framework for evaluating proposed mining activities for three reasons. First, the NEPA process provides the most comprehensive and integrated framework for undertaking these evaluations. . . . It allows for clear identification of tradeoffs between different and sometimes competing values, and promotes a better understanding by all stakeholders of the implications of the many decisions involved in the preparation and approval of a mine's operating plan. . . . No other regulatory program provides such a comprehensive, integrated mechanism for decision making. Second, the NEPA process ensures that the decisions are based on careful analyses of site-specific conditions . . . . Third, mining technology for a site can vary substantially, depending on the type of ore, the nature and extent of the ore deposit, and many other site-specific conditions . . . . For all these reasons, the Committee believes that the agencies should continue to rely to the maximum extent possible

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[48] *See, e.g.* EPA, Response to 2013 Public Comments, at 388 ("The scope of the assessment is limited to potential risks to salmon from large-scale surface mining . . . and does not include an analysis of direct socioeconomic impacts on local communities.").

[49] *See* IHS, The Economic and Employment Contributions of a Conceptual Pebble Mine to the Alaska and United States Economies at 17 (May 2013), *available at* http://corporate.pebblepartnership.com/files/documents/study.pdf [hereinafter IHS Study].

[50] *Id.* at 17-18.

[51] *See* Alaska Dep't of Labor, Alaska Economic Trends, at 7 (Apr. 2013), *available at* http://labor.alaska.gov/trends/trends2013.htm.

[52] *See* Lake and Peninsula Borough Comprehensive Plan Update, at 5, 14-15, (Sept. 2012), *available at* http://www.lakeandpen.com/index.asp?Type=B_BASIC&SEC={45A96F5A-83C3-4865-9D03-D19E541FAFC1}&DE=.

[53] National Research Council, *Hardrock Mining on Federal Lands* 6 (National Academy Press 1999).

on the flexible, comprehensive NEPA evaluation process for making permitting decisions. [54]

As the NAS report describes, the NEPA process is vital to a full and objective review of the Pebble Project. EPA's proposed Section 404(c) process would not provide the same comprehensive review because it would not be based on an actual application and would be focused only on theoretical aquatic resource impacts of a theoretical project. An EIS would include a careful and systematic review of all of the impacts of the project, as specifically proposed by the applicant, as well as reasonable alternatives, as explored by federal, state and local regulatory agencies, and a full complement of project- and site-specific mitigation measures. The public, the Corps, EPA, tribes and the State would all be able to participate in developing the scope and content of the EIS. The State, tribes and local communities with a stake in the economics of the area could provide needed input concerning the economic and social impacts of the Pebble Project, including the salutary economic impact of expanded employment opportunities and augmentation of social services afforded by the presence of this project. Moreover, the participation of the sponsors of the Pebble Project in conjunction with that of the public in the NEPA process could yield mitigation measures or alternatives that answer many of the concerns EPA has raised regarding the project.

In the past, EPA has only exercised its 404(c) authority as a last resort, after it has reviewed a proposed Corps permit decision, provided any objections or comments through the NEPA process, and given the Corps and applicant an opportunity to address EPA's concerns through amended project design and/or project- and site-specific mitigation. EPA should continue that precedent in this case, as to act preemptively without a specific project proposed or full CWA and NEPA record would be legally unsupportable. These established procedures are the best means to achieve EPA's goal of assuring certainty to affected parties. Moreover, EPA scientists within ORD have admitted that the NEPA permitting process would be more rigorous, comprehensive, and better suited to regulatory decision-making than the Assessment.[55] Abandoning the NEPA process – particularly when there could be no environmental harm in letting the process unfold – is counter-productive and inconsistent with EPA precedent.

III. The Assessment Does Not Provide a Legitimate Basis for Section 404(c) Action

EPA explains in its February 28, 2014 letter[56] that its decision to proceed under Section 404(c) is based in large part on EPA's Assessment.[57] However, EPA's Assessment does not provide a legitimate basis for determining that the Pebble Project will cause an unacceptable adverse effect to important fishery areas in the Bristol Bay Watershed for the following reasons:

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[54] *Id.* at 108-10.

[55] *See, e.g.*, Response to Peer Review Comments, *supra* note 34 at 82 ("The assessment is sufficiently comprehensive to meet its stated purpose. It is not intended to be an environmental impact assessment."), *id.* at 165 ("The assessment is not intended to duplicate or replace a regulatory process . . ."), *id.* at 217 ("[D]etailed evaluation of those effects will be left to the NEPA and permitting processes should a mine be proposed.").

[56] *See* Feb. 28, 2014 EPA Letter at 1.

[57] We note that EPA has directed the Pebble Limited Partnership to review Chapter 14 of the Assessment for specific criticisms of the proposed Pebble Mine Project. However, Chapter 14 only provides an integrated risk characterization for the three hypothetical mine scenarios.

- The Assessment evaluates mine scenarios largely of EPA's creation, which do not reflect modern mine engineering and environmental management practices. The Assessment's failure to consider modern mining practices led to numerous flaws in the Assessment, including:
    - Projected impacts on downstream water quality, water flows and aquatic habitat are greatly exaggerated.
    - Risks associated with tailings storage and other project features and operations are significantly overstated.
- PLP has not yet defined a proposed development plan for the Pebble Project; accordingly, footprint impacts associated with the Assessment's mine scenarios are entirely speculative.
- The Assessment does not account for the robust compensatory mitigation measures (related to both aquatic habitat and wetlands) required of such a project.
- The Assessment does not come close to demonstrating adverse effects on aquatic resources, including quantifying impacts to fisheries, and therefore provides an insufficient foundation for taking any action under CWA § 404(c).
- EPA's process and communications before and during the publication of the Assessment demonstrate the document's predetermined outcome and bias.

Each of these issues is discussed further below.

A. The Assessment's Mine Scenarios Are Unrealistic Because They Lack Modern Engineering Design and Environmental Management Practices

The Assessment presents three mine scenarios that were developed by EPA, not PLP: Pebble 0.25, Pebble 2.0 and Pebble 6.5. Each of these have similar project components (open pit, tailings and waste rock storage facilities) but different footprint sizes and locations.[58] The Assessment acknowledges that the scenarios "are not based on a specific mine permit application and are not intended to be the detailed plans by which the components of a mine would be designed."[59] In fact, EPA admits that"[t]he exact details of any future mine plan for the Pebble deposit or for other deposits in the watershed will differ from our mine scenarios."[60]

The Assessment also states that EPA's Pebble 2.0 and Pebble 6.5 mine scenarios (though not Pebble 0.25) are based on "preliminary mine details put forth in Northern Dynasty Minerals' Preliminary Assessment of the Pebble Mine (Ghaffari et al. 2011)."[61] It notes that NDM's

[58] *See Assessment*, at 6-1.
[59] *Id.* at 6-1.
[60] *Id.* at Executive Summary, at 10.
[61] *Assessment*, at 6-1.

Preliminary Economic Assessment report (characterized by EPA as *Ghaffari et al*) states that the mine concepts it presents are considered "economically viable, technically feasible and permittable." [62]

It is important to understand that the NDM study upon which EPA has based two of its mine scenarios is only a preliminary assessment of the *economic* potential of the Pebble deposit. It does not present a detailed or even substantive *engineering* analysis of any proposed development, nor the detail of any underlying plans, strategies and technologies for managing environmental effects. Moreover, the NDM Preliminary Economic Assessment is now out of date and does not reflect the current status of engineering and project planning at Pebble: "The project description that the Pebble Partnership ultimately elects to submit for permitting under NEPA may vary in a number of ways."[63]

In its most recent corporate filings, Northern Dynasty has provided further guidance that the mine development concepts presented in the 2011 Preliminary Economic Assessment are no longer relevant:

> However, since the withdrawal of Anglo American from the Pebble Partnership in late 2013 and in light of more recent stakeholder and regulatory feedback, Northern Dynasty initiated a comprehensive review of previous analyses of the Pebble Project, including the 2011 PA and various project components. Current studies of the Pebble Project investigate new infrastructure plans as well as lower throughput rates in a revised project development concept. As well, the cost and revenue inputs require updating given the nearly 4 years which have passed since the 2011 PA was done. For these reasons, any project which is ultimately put forward for permitting will almost certainly be different from the economic assessment model examined in the 2011 PA. Therefore conclusions in the 2011 PA study may have limited going-forward relevance at this time.[64]

In characterizing the mine development concepts presented in the NDM Preliminary Economic Assessment as "permittable", its authors acknowledge that, in their view, pending the application of modern engineering design and project-specific mitigation measures (including compensatory mitigation for unavoidable impacts to aquatic habitat and wetlands), each of the development concepts could achieve necessary federal and state permits. As the NDM Preliminary Economic Assessment states:

> Before a decision is made to initiate permitting, the Pebble Partnership will undertake a comprehensive suite of environmental and social impact analyses, and an Environmental and Social

[62] Northern Dynasty Minerals Ltd., Preliminary Assessment of the Pebble Project, Southwest Alaska, at 4 (Feb. 15, 2011) [hereinafter NDM Preliminary Economic Assessment].
[63] *Id.* at 60.
[64] Management Discussion and Analysis, Year Ended December 31, 2013, Northern Dynasty Minerals Ltd., page 6.

> Impact Assessment. These will provide a rigorous, science-based analysis to demonstrate that the project will meet permitting requirements in Alaska, as well as international best practice for project development.[65]

Notwithstanding this description of work remaining to be done to demonstrate the "permittability" of the mine concepts in the NDM Preliminary Economic Assessment, EPA characterizes its mine scenarios as "realistic, plausible descriptions of potential mine development phases, consistent with current engineering practice and precedent."[66] EPA also variously describes the mine scenarios in its Assessment as being based on "components" [67]or "elements"[68] of NDM's Preliminary Economic Assessment, while at other times describing them as based on "a preliminary mine plan,"[69] "a mine plan that could be submitted (to permitting agencies)"[70] and even "complian[t] with current regulatory standards."[71] Finally, EPA states: "Many of the details of a mine plan may differ from what we have described. However, the essential elements of a mine plan are represented here and would have similar effects regardless of modifications implemented."[72]

In reality, the environmental effects of the mine scenarios presented in EPA's Assessment would vary tremendously based on the actual facility footprint proposed, detailed engineering design, environmental management practices and project-specific mitigation approaches ultimately employed. EPA's claims to the contrary – which assumedly are made to bolster its case and predetermined outcome that the environmental effects of mine development concepts presented in NDM's Preliminary Economic Assessment can be predicted in the absence of detailed engineering designs and underlying plans, strategies and technologies for managing environmental effects – is demonstrably false.

Thus, while EPA's Assessment characterizes two of its mine scenarios as derived from Northern Dynasty, the detailed engineering design and environmental management assumptions made with respect to Pebble 2.0 and Pebble 6.5 (as well as to Pebble 0.25) are entirely of EPA's fabrication.

NDM's Preliminary Economic Assessment states that "international best practice" standards will be the basis for project engineering and operating plans proposed by PLP.[73] Project components that prevent, mitigate and (where necessary) compensate for environmental effects are key aspects of international best practice. To the degree that the mine scenarios in

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[65] NDM Preliminary Economic Assessment, at 387.
[66] *Assessment*, at 6-1.
[67] EPA, Response to Public Comments on the May 2012 Draft of An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay Alaska, at 65 (Jan. 2014).
[68] *Id.* at 72.
[69] *Id.* at 58.
[70] *Id. at* 96.
[71] EPA, Response to Public Comments on the April 2013 Draft of An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay Alaska, at 119.
[72] Response to Public Comments 2012, at 72.
[73] NDM Preliminary Economic Assessment, at 387.

EPA's Assessment ignore such components, it does not comply with international best practice and cannot be accurately said to be based upon NDM's Preliminary Economic Assessment.

There is considerable evidence that many of the engineering and environmental management assumptions EPA applies to its mine scenarios in its Assessment do not reflect "international best practice" – the most progressive and protective engineering standards and environmental management approaches available to mine developers today. These approaches will be required of proponents seeking mine development permits in the Bristol Bay region of Southwest Alaska, and Pebble owners are committed to adopting them.

Numerous examples of instances in which EPA's mine scenarios do not meet international best practice standards are provided below, along with evidence that the project impacts and risks presented in EPA's Assessment are greatly exaggerated.

1. The Assessment's Projected Impacts on Downstream Water Flows are Greatly Exaggerated

PLP has not yet proposed a development plan for the Pebble Project, so EPA's estimate of flow reductions in the three tributary streams closest to the deposit (North & South Fork Koktuli and Upper Talarik Creek, as shown in Map 1 below) under each of the three mining scenarios presented in the Assessment are entirely speculative. As demonstrated below, the flow reduction estimates are also grossly exaggerated.

Evidence of bias and exaggeration is reflected in the metric that EPA uses to report stream flow changes. "Million cubic meters per year" is not a standard unit for use by stream habitat scientists, engineers or hydrologists to estimate stream flow changes, but its use allows EPA to report massive numbers in its Assessment, thereby creating the impression of significant water loss. Habitat responses to stream flow changes are typically measured by scientists using "cubic meters per second" or "cubic feet per second". Accordingly, rather than the projected 4, 26 and 27 million m^3 per year estimate provided in the Assessment, the appropriate measure of stream flow change under EPA's three mine scenarios would be 0.1, 0.8 and 0.9 m^3per second, respectively.

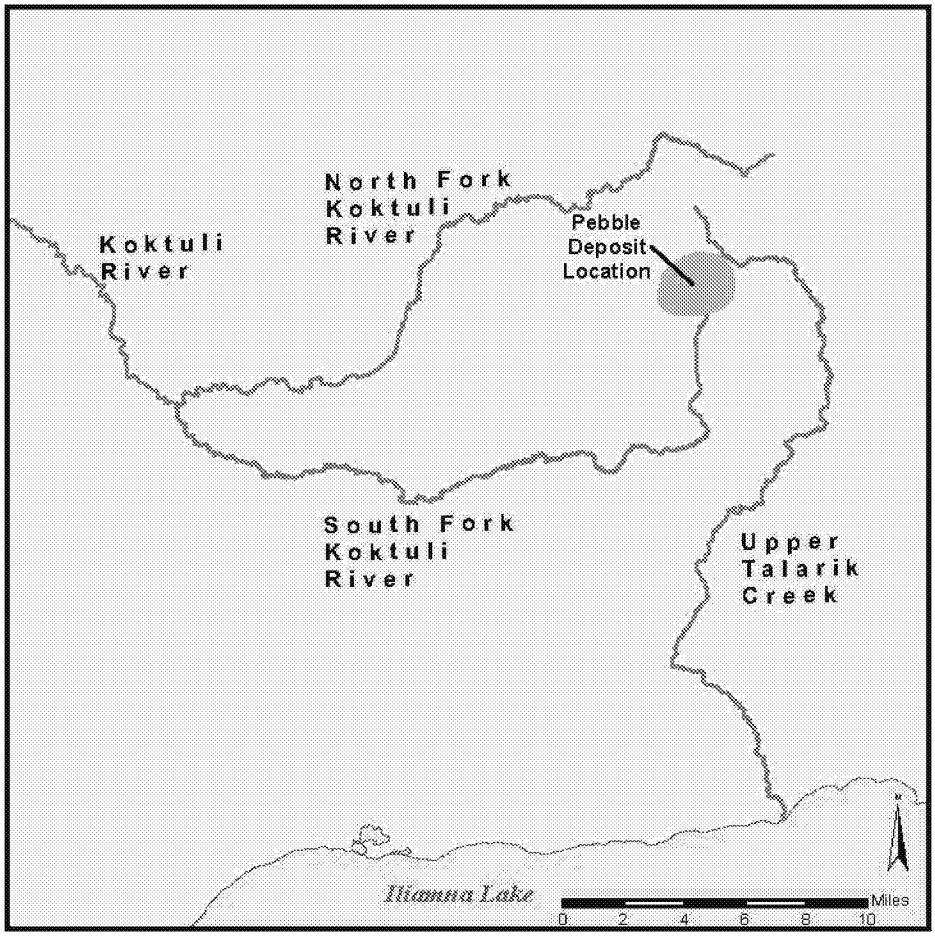
Predicted flow effects associated with EPA's mine scenarios are also exaggerated because the flow reductions modeled in the Assessment are contingent on assumptions made about how, when and where surplus waters are released into nearby streams following treatment. Importantly, and as discussed below, it appears EPA has under-estimated by more than 80 percent the surplus water volumes available for treatment and release to mitigate potential effects to downstream aquatic habitat.

In its Assessment, EPA assumes no release of surplus water to Upper Talarik Creek and instead speculates that half of all surplus water would flow to the North Fork Koktuli and half to the South Fork Koktuli at a steady rate during mine operations.[74] ***This is a wholly arbitrary assumption, and one that would not be allowed by state or federal regulatory agencies. A thorough permit and EIS analysis would identify EPA's surplus waters release strategy as a***

[74] *Assessment*, Tables 7-16, 7-17, & 7-18 (Pages 7-44, 7-45, & 7-46 respectively).

significant design flaw and would direct the proponent to re-submit more appropriate and science-based plans.

MAP 1. Deposit Area Streams



However, EPA's assumption appears to be designed to allow the Assessment to characterize downstream flow impacts in as extreme a fashion as possible. As discussed below, the effect of stream flow reductions on downstream aquatic habitat associated with EPA's three mine scenarios would have been substantially reduced had a more strategic and science-based surplus water release strategy been employed. That said, even the exaggerated flow reductions presented in the Assessment are minor when put into context of total flows in the three streams closest to Pebble, and inconsequential when put into context of total flows in the Nushagak/Kvichak river systems (Map 1) and overall Bristol Bay watershed (Map 2).

TABLE 1
Local and Regional Stream Flow Changes with EPA's 50:50:0 Surplus Flow Distribution

EPA Mining Scenario	Annual water consumption	Change North Fork Koktuli flows	Change South Fork Koktuli flows	Change Upper Talarik Creek flows	Change Nushagak flows	Change Kvichak flows	Change total Bristol Bay flows
Pebble 0.25	4 million m3/yr (0.13 m^3/s)	+ 0.4%	– 1%	– 2%	–0.01%	–0.03%	– 0.01%
Pebble 2.0	26 million m^3/yr (0.82 m^3/s)	-3%	-4%	-8%	- 0.05%	- 0.1%	- 0.03%
Pebble 6.5	27 million m^3/yr (0.85 m^3/s)	+ 6%	-10%	-15%	- 0.01%	0.19%	- 0.03%

(All values in Table 1 are derived from the three mine scenarios presented in EPA's Assessment, and calculate the percentage change in mean annual flow in stream and river systems surrounding Pebble as a result of releasing 50% of surplus waters into of the North and South Fork Koktuli and none into Upper Talarik Creek).

MAP 2. Major Hydrology Features in the Region

As further evidence of the minor effects that EPA's assumed flow changes would have on local streams, the Assessment cites the following thresholds (sourced from a peer reviewed study[75]) for ecosystem impacts associated with changes to natural flows in a stream or river system:[76]

- "*Streamflow alteration below 10% would cause minor impacts on the ecosystem with a relatively high level of ecosystem protection.*
- "*Streamflow alteration of 11 to 20% would cause measurable changes in ecosystem structure and minor impacts on ecosystem function.*
- "*Streamflow alteration of greater than 20% would cause moderate to major changes in ecosystem structure and function. Increasing alteration beyond 20% would cause significant losses of ecosystem structure and function.*"[77]

[75] *See Assessment*, at 15-32 (citing Richter, B., et al, A Presumptive Standard for Environmental Flow Protection, *River Research and Applications* 228: 1312-1321).
[76] *Assessment*, at 7-53.
[77] *Id.*

As shown in Table 1 above, all but one of the flow changes estimated by EPA in local streams is 10% or less and thus would provide *"a relatively high level of ecosystem protection"* and even that one would involve only "*minor impacts on ecosystem function*" in only one location. The exception is Upper Talarik Creek, the one stream near Pebble to which EPA elected to release no surplus flows.

Had EPA selected a more strategic and science-based strategy for releasing surplus waters, each of the streams surrounding Pebble would fall well below this 10% threshold for all three mining scenarios. For instance, had EPA selected another arbitrary, but slightly more reasonable surplus water release strategy – that is, releasing one-third of all surplus waters into each of the three streams at a steady rate over the course of each year – average flow reductions in Upper Talarik Creek, and the North and South Fork Koktuli would all fall well below the acceptable 10% threshold for each EPA mine scenario, with the result that in ALL instances the estimated flow change would involve "*a relatively high level of ecosystem protection*" (as shown in Table 2 below).

TABLE 2
Local and Regional Stream Flow Changes with Equal Surplus Flow Distribution

EPA Mining Scenario	Annual water consumption (EPA_	Change North Fork Koktuli flows	Change South Fork Koktuli flows	Change Upper Talarik Creek flows
Pebble 0.25	4 million m3/yr (0.13 m^3/s)	-0.9%	- 1%	– 1%
Pebble 2.0	26 million m^3/yr (0.82 m^3/s)	- 5.5%	-4%	- 4.6%
Pebble 6.5	27 million m^3/yr (0.85 m^3/s)	- 5%	-7%	-6 %

(All values in Table 2 are derived from the three mine scenarios presented in EPA's Assessment, and calculate the percentage change in mean annual flow in stream and river systems surrounding Pebble as a result of releasing 33.3% of surplus flows into each of the North and South Fork Koktuli and Upper Talarik Creek).

Just as importantly, the flow reductions for the three streams surrounding Pebble under each of the Assessment's three mine scenarios is an average for the whole stream. Flow reductions would be greatest in the upper reaches of these streams where habitat values are lowest, and lowest in lower reaches of these streams where habitat values are highest. This is a result of natural inflows to each stream system increasing in downstream reaches; a natural dynamic that would further mitigate against negative flow effects on habitat – particularly the most productive habitat. Nonetheless, these stream segment differences in flow effects are another reason that what is required, and what is standard practice when properly designing mining projects, is a more sophisticated flow and habitat modeling approach to a water release strategy than the arbitrary and unpermittable one used in the Assessment.

In the Assessment, the strategy EPA employs for releasing treated surplus waters to nearby streams is erroneously attributed to Northern Dynasty Minerals Ltd. – specifically to the

NDM Preliminary Economic Assessment report published in 2011.[78] While NDM's Preliminary Economic Assessment does state that the mine development concepts it presents would capture and store surplus water, and that surplus waters would be treated and subsequently released to nearby streams to optimize downstream aquatic habitat, it does not provide a specific surplus water release strategy, nor does it specify where or how much surplus water would be released from the Water Treatment Plants.[79]

EPA claims otherwise, stating that the surplus water release strategy presented in the Assessment is wholly derived from Northern Dynasty.[80] This is incorrect. Project water consumption estimates and surplus water volume estimates are not presented in NDM's Preliminary Assessment nor is any surplus water release strategy provided. ***Thus, the surplus water release strategy discussed in the Assessment is a fabrication attributable solely to EPA.*** EPA's characterization of it as being sourced from NDM is inappropriate and misleading.

PLP has also determined that EPA's hydrology estimates for the watersheds surrounding Pebble, as presented in the Assessment, are incorrect. Based on extensive hydrological studies undertaken over the past 10 years, PLP estimates that about five times as much surplus water will be available for treatment and release to mitigate downstream effects on aquatic habitat than the Assessment predicts.

In addition, PLP has developed a far more sophisticated model for assessing and managing the effects of flow changes on downstream aquatic habitat than the method EPA utilized in its Assessment. The Physical Habitat Simulation ("PHABSIM") model, originally developed more than 30 years ago by the U.S. Geological Survey ("USGS") and U.S. Fish and Wildlife Service ("USFWS"), is the most scientifically advanced and widely accepted methodology for determining aquatic habitat versus stream flow relationships. At Pebble, it has the added benefit of helping determine the best possible surplus water release strategy to optimize downstream habitat conditions for salmon and resident fish. Pebble's PHABSIM model is built upon some 10 years of site-specific stream flow monitoring and aquatic habitat surveys in the three streams surrounding the Pebble deposit, and can predict habitat availability for four species of salmon and three species of resident fish in hundreds of catalogued stream reaches at different times of the year and for different life stages.

When PLP finalizes a development plan for Pebble and applies for federal and state permits, it will propose a science-based surplus water release strategy based on PHABSIM modeling and local ecological considerations. Rather than releasing 50 percent of all surplus water into the North Fork Koktuli and 50 percent into the South Fork Koktuli at a steady rate each year, and none into Upper Talarik Creek, PLP will regulate precisely how much water goes into each watercourse at different times of the year to optimize downstream habitat conditions and avoid "unacceptable adverse effects."

To demonstrate both the sophistication and superior outcomes of using PHABSIM modeling to determine an optimal surplus water release strategy, PLP has applied this approach

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[78] *Assessment*, at 6-1.
[79] NDM Preliminary Economic Assessment, at 366, 51, 53.
[80] *Assessment*, at 6-27.

to a project of similar footprint size and scale to EPA's Pebble 2.0 mine scenario. Based on PLP's more accurate estimates of surplus water available for treatment and release, PLP has applied PHABSIM modeling to generate a science-based surplus water release strategy that actually improves habitat availability for most anadromous and resident fish species.

The resulting changes in habitat availability in the three tributary streams surrounding Pebble (as shown in Table 3 below) would have no discernible effect on local fish populations or the regional fisheries they support, and may in fact be beneficial for some species.

TABLE 3
Fish Habitat Changes in the North Fork and South Fork Koktuli and Upper Talarik Creek based on a Mine Scenario comparable to EPA's Pebble 2.0 and Available Restorative Flows as determined by PLP's PHABSIM Modeling

Species	Spawning habitat % change	Rearing habitat % change	Total habitat % change
Sockeye	+1.2	+1.5	+1.3
Chinook	-1.8	+2.8	-0.01
Coho	+0.4	0	+0.3
Chum	+0.9	0	+0.9
Arctic grayling	+10.2	+0.1	+5.4
Dolly Varden	+2.1	+0.4	+1.7
Rainbow Trout	+12.5	+2.5	+8.4

For the vast majority of fish species – including commercially important Sockeye salmon as well as for Coho and Chum salmon, Arctic Grayling, Dolly Varden and Rainbow Trout – flow changes resulting from a mine scenario comparable to EPA's Pebble 2.0 mine scenario following a PHABSIM-guided surplus water release strategy would improve both spawning and rearing habitat availability. A small reduction in availability of Chinook salmon spawning habitat is the only negative impact modeled, although this change is minor – particularly in the context of overall Chinook habitat in Nushagak and Kvichak drainages and the broader Bristol Bay region. No discernible effect on Chinook salmon populations or the regional fisheries they support would occur, particularly inasmuch as Chinook salmon spawning habitat availability is not a limiting factor in any of the three drainages surrounding Pebble. This conclusion is further supported by the additional productive capacity resulting from significant opportunities for compensatory mitigation for unavoidable impacts on aquatic habitat detailed later in this submission.

These modeled results illuminate the significant shortcomings of the Assessment as a scientific document upon which to base a regulatory decision. EPA's scientific understanding of surplus waters available to offset flow reductions is flawed. Its assumptions about the surplus water release strategy are wholly arbitrary (rather than science-based). And the scientific analysis the Agency uses to forecast the effect of flow changes is grossly inadequate. That EPA then incorrectly attributes its surplus water release strategy to Northern Dynasty only exacerbates the lack of scientific integrity associated with the Assessment.

In contrast to the sophisticated PHABSIM modeling above – which quantifies habitat availability changes for seven species of anadromous and resident fish at different life stages, different times of the year and different locations throughout the North Fork and South Fork Koktuli and Upper Talarik Creek drainages – EPA's estimate is both overly simplistic and under-informed. The Assessment predicts that stream flow alterations exceeding 20% would adversely affect habitat in 9, 17 and 33 miles of stream downstream of Pebble 0.25, Pebble 2.0 and Pebble 6.5 respectively.[81]

Not only are these estimates based on the Assessment's arbitrary and demonstrably ineffective surplus waters release strategy, they also rely on a simplistic methodology for assessing habitat impacts. For instance, there is absolutely no consideration for the quality or type of habitat affected, despite the fact that those stream reaches likely to experience flow reductions greater than 20% are at the upper reaches of the three tributaries – where habitat values and fish densities are lowest.

One of the key scientific shortcomings of EPA's Assessment is the absence of any data related to fish abundance and density in the streams systems surrounding Pebble. As a result, in describing aquatic habitat in the streams surrounding Pebble, the Assessment only relies on fish distribution – rather than fish use, abundance and density, which are all measures of habitat quality and productivity – to speculate on aquatic habitat effects. The Assessment leaves lay readers with the assumption that all aquatic habitat is equal and plays equally important roles in supporting fish populations, which is empirically not the case. Further, EPA provides no causal link between any flow changes, availability of productive habitat, fish production or resulting fisheries harvests.

In fact, PLP studies have shown that streams at the upper reaches of the three streams surrounding Pebble – those areas most likely to be affected by flow changes associated with mine development – either are not utilized by fish or support low to very low densities of fish. Many dry up in summer and freeze over in winter. And while some areas may support spawning and rearing habitat for small numbers of anadromous and resident fish populations, the availability of such habitat is not a limiting factor for any of these fish populations.[82]

There is another problem with EPA's prediction that 9, 17 and 33 miles of stream downstream of Pebble 0.25, Pebble 2.0 and Pebble 6.5 respectively would experience flow reductions in excess of 20%.[83] It appears the vast majority of stream miles experiencing a 20% or greater reduction in flows in the Assessment occur in the South Fork Koktuli drainage because EPA selected to release surplus waters to a small tributary of the South Fork – leaving miles of the mainstem river upstream of the confluence with this small tributary without any mitigative flows.[84] This is another major flaw in the EPA mine scenario design that contributes to unnecessary and avoidable effects.

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[81] *Assessment,* Executive Summary, at 13.
[82] PLP, Environmental Baseline Document, at Ch. 15.
[83] *Id.* at 14.
[84] *Assessment*, at 6-31, 7-37, 7-38, & 7-39 respectively.

Most importantly, an EIS completed by the Corps as part of a comprehensive permitting process would measure downstream impacts on aquatic habitat resulting from stream flow changes with the most robust scientific information and analyses available (most likely PHABSIM modeling based on Pebble's EBD data). This analysis would also be informed by an actual mine plan prepared by the proponent, including a scientifically derived surplus water release strategy. Such an analysis would present a far more detailed and scientifically defensible estimate of downstream habitat impacts due to stream flow changes than the Assessment does. Such an analysis will also demonstrate far less severe impacts than EPA has estimated, and would in fact predict habitat improvements for many fish species. More importantly, when taken into consideration with the abundant opportunities for both on-site and off-site compensatory mitigation there would be no "unacceptable adverse impacts."

2. The Assessment's Projected Impacts on Downstream Water Quality are Grossly Exaggerated

In its Assessment, EPA assumes that a significant volume of leachate (untreated water contaminated with naturally occurring metals and other mineral constituents as a result of its contact with mine facilities) will not be captured by water management systems associated with each of its mine scenarios, causing significant downstream water quality effects. However, uncontrolled seepage from both waste rock storage and tailings storage facilities assumed in the Assessment is substantially greater that what would be permitted by federal and state regulatory agencies. It is also substantially greater than what would be expected at a modern mine utilizing conventional seepage design considerations and water management practices. Thus, the Assessment grossly misrepresents the characteristics of a modern mine proposal that would be submitted for permitting.[85]

It is important to note that EPA has not actually modeled the environmental performance of a proposed water management system in its Assessment. Rather, it merely assumes that 50% of all leachate produced from water flowing through waste rock placed outside the open pit drawdown area would escape to the downstream environment.[86] In the case of tailings storage facilities ("TSF"), EPA appears to have assumed that 100% of seepage at the downstream edge of embankments would escape to the environment – meaning the Agency allowed for no seepage collection measures at all.[87] Such a scenario does not reflect modern mine engineering design criteria or international best practice, and could never be permitted in the United States, so it is little wonder that the Assessment reaches conclusions of adverse water quality impacts.

Further, and as noted above, EPA has assumed no seepage collection features will be engineered or built at the downstream edge of its tailings storage facilities. However, NDM's Preliminary Economic Assessment is clear that a "seepage collection system will be installed downstream of these design elements (tailings storage facilities) to capture any seepage that does migrate through them."[88] ***In this instance, it is unavoidably clear that mine scenarios presented***

[85] *See* Exhibit J, Memorandum from Cathy Safadi, Knight Piesold Consulting, to Bruce Jenkins, Response to Final EPA BBWA Report: Leachate from Mine Facilities (Apr. 23, 2014).
[86] *Assessment*, at 8-54 and 8-13.
[87] *Id.* at 8-4.
[88] NDM Preliminary Economic Assessment, at 50.

in EPA's Assessment diverge fundamentally from NDM's Preliminary Economic Assessment and international best practice standards.

EPA has not considered or evaluated the effectiveness of conventional seepage management design approaches, operational practices and adaptive management strategies, yet recognizes in the Assessment that such practices and strategies would be part of a properly designed, operated and maintained mine. Furthermore, conventional seepage management systems employed at modern mines regularly achieve significantly greater seepage capture rates than is assumed in the Assessment.

EPA states in the Assessment: "If waste rock piles are designed properly with appropriate mitigation measures, monitored and maintained, release of contaminants is possible, but unlikely."[89] Despite acknowledging that practices and technologies currently exist to address seepage concerns associated with modern TSFs, EPA chose to apply none of these approaches to the mine scenarios in its Assessment. Instead, EPA blithely assumes that 50 percent of all leachate associated with waste rock piles outside of the pit drawdown zone will be lost to the environment, and uses this assumption to predict exaggerated downstream water quality impacts.

Similarly for the TSF, EPA acknowledges in the Response to Peer Review Comments:

> If a mine at the Pebble deposit goes forward, the design of the TSFs should include a more thorough flow analysis that would calculate the expected rate of flow and associated flow paths from the TSFs. If the calculated leakage rates were unsatisfactory from an environmental, operational, or economic perspective, the designer could incorporate other design elements (e.g. a liner) to reduce the expected leakage rate.[90]

It is ironic that EPA authors suggest additional flow analyses should be undertaken by Pebble proponents, and that project-specific seepage management systems be designed to address downstream water quality concerns, because this is precisely what NDM's Preliminary Economic Assessment states that PLP will do.

Conventional seepage management systems (including those likely to be proposed at Pebble) regularly include:

- seepage collection ponds down-gradient of waste rock piles and TSF areas;
- pumping wells to intercept and reduce potential leachate losses;
- seepage cut-off walls; and
- design, installation and operation of a groundwater monitoring program down-gradient of waste rock piles and TSFs based on site specific mine design and groundwater conditions.

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[89] *Assessment*, Appendix I, at 5.
[90] Response to Peer Review Comments, at 167.

Utilizing these and other project and site-specific water management features and technologies, PLP will submit to regulators a water collection/management system (including water treatment plant) that is sufficiently robust to ensure that water quality/chemistry in monitoring wells at the mine perimeter consistently meets all applicable state and federal water quality standards. This proposed water management system will then be subjected to rigorous and sophisticated water quality modeling during mine permitting, and must demonstrate to federal and state regulatory agencies that downstream water quality will be protected through all phases of mine development.

There is a great deal of evidence in the United States and around the world to demonstrate that modern mines engineered and operated using conventional water management practices and technologies that would be required for the Pebble Project consistently maintain downstream water quality. These conventional water management approaches are not considered in the Assessment; rather, EPA has arbitrarily assumed a seepage interception rate that is both out of compliance with federal and state regulation, and demonstrably worse than what would be expected had conventional engineering design and operations practices been applied.

Most importantly, EPA's arbitrary and grossly exaggerated assumptions about downstream water quality impacts associated with its mine scenarios in the Assessment cannot replace the rigorous and sophisticated water quality modeling to be undertaken as part of a permit review and EIS process under NEPA. Not only will the Corps use a science-based predictive model – rather than an arbitrary 50 or 100 percent seepage loss assumption – its forecast will be based on an actual development plan proposed by PLP, including a fully engineered water management system based on project and site-specific criteria.

3. The Assessment Overstates Other Risks Associated with Mine Facilities and Operations

In its Assessment, EPA evaluates the historical performance of TSF embankments around the world, as well as historical performance records for other industrial facilities and operations, to predict the likelihood and consequence of a broad range of operating failures at a modern mine in southwest Alaska.

This predictive model is fundamentally flawed, particularly since the practice of modern engineering is focused on learning from the errors of the past, while applying new approaches to continuously improve operating performance and minimize uncertainty and risk.[91] The principal data source for the Assessment's TSF embankment risk discussion is a 2001 report from the International Commission on Large Dams ("ICOLD"), which evaluated some 220 historical dam accidents and failures dating back as far as 1917.[92] Consistent with the engineering profession's goal of learning from the past to continuously improve operating performance and minimize risk,

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[91] *See* Exhibit K, Memorandum from Dan Friedman, Knight Piesold Consulting, to Bruce Jenkins, *Tailings Dam Failure – Related Technical Support for NDM's Response to Final EPA BBWA* (Apr. 23, 2014).

[92] *Assessment*, at 9-7 ("The International Commission on Large Dams compiled a database of 221 tailings dam incidents (events potentially leading to failure) and failures (events in which dams stop retaining tailings as designed) that occurred from 1917 through 2000.").

the stated intent of the 2001 ICOLD study is "to learn…not condemn."[93] The ICOLD database was developed by industry to identify the most relevant causes of TSF failures so as to advance engineering, construction, operational and regulatory approaches to avoid them in the future. Rather than using the database to predict future events (as EPA has done) the purpose of the database is to fundamentally improve TSF performance over time.

Historical failures, many decades old and occurring in countries with significantly less regulatory oversight than the United States, are not a sound basis on which to form regulatory decisions on a modern mine operation at the Pebble deposit. Mines permitted decades ago without the rigor of modern permitting requirements and technological developments in engineering design and construction have had a much higher failure rate than modern mines. ***The historical failure rate of such mines is thus wholly irrelevant to the potential failure rate of a mine using modern technology and complying with the current stringent federal and state environmental and safety requirements.***[94]

Similarly, the Assessment cites a series of studies by Davies et al (2000, 2002) to bolster its predictions about modern TSF embankment failure risk based on historical performance. With Davies as well, EPA has ignored both the study's intent (to improve future performance) and its authors' conclusion: that "there is the potential to essentially eliminate such events with an industry-wide commitment to correct design and stewardship practices."[95]

Ultimately, what these studies of past failures demonstrate is the key design and operating considerations that project proponents and regulators must heed in order to avoid failure, including:

- the vast majority of failures are associated with embankments designed and constructed using the upstream method, rather than the eminently more stable center-line or downstream methods (as anticipated at Pebble);
- embankment foundations must be adequately prepared prior to construction;
- adequate hydrologic and hydraulic evaluations must be performed to ensure embankments are designed with adequate 'freeboard' to resist over-topping, even in the most extreme weather conditions;
- construction practices must be adequately performed, monitored and regulated, in particular to avoid problems associated with inadequate compaction of fill material;
- tailings beaches must be properly maintained;
- underground development must be a suitable distance away from TSF embankments so as to avoid instability associated with subsidence.

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[93] International Commission on Large Dams (ICOLD).Tailings Dams, Risk of Dangerous Occurrences, Lessons learnt from Practical Experiences, at 55 (2001).

[94] As noted in the 2013 PLP comments, "The statistics that it uses to support this assertion are based on historical dam failures, which to a large extent are not relevant to modern tailings dams because of improved designs, more stringent regulatory oversight, and higher operating standards." Pebble Limited Partnership, *Comments on Second External Review Draft of "An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska"* (Apr. 2013), at 17 ("Pebble Limited Partnership Comments") (citing Knight Piesold Consulting, *Review of the Bristol Bay Assessment*, at 2 (June 28, 2013)).

[95] Davies, M. P., et al., Mine Tailings Dams: When Things Go Wrong, *in* Association of State Dam Safety Officials, U.S. Committee on Large Dams, *Tailings Dams*, at 261-73 (2000).

Professional engineers qualified to design, build and operate modern TSF embankments, as well as the professional regulators who review and oversee their work, understand that all of these considerations can be fully addressed during mine permitting, construction, operations and even following closure. The long-term integrity and stability of any dam structure requires a full understanding of project and site-specific conditions, and a commitment (on behalf of the project operator and regulator) to proper construction, operation, maintenance, monitoring, and enforcement.

Any TSF embankment proposed, permitted, built and operated in southwest Alaska will certainly benefit from the accumulated knowledge presented in the ICOLD and Davies studies. ***In fact, no tailings embankment built since 2000 utilizing a center-line or downstream construction method and located in a jurisdiction with first-world environmental standards and regulatory oversight has ever failed. PLP believes it is this modern safety record – rather than 220 historical incidents of outdated engineering design and poor construction, maintenance and operating histories – that should inform stakeholder understandings of risks associated with TSF embankments in the United States in the 21st century.***

The independent experts retained to peer reviewer the Assessment agree that the TSF embankment risks cited by EPA are significantly overstated for a modern project in Alaska. Dr. Dirk van Zyl commented:

> I expect that a tailings review board will also be used for the Pebble Mine and the behavior of a tailings management facility designed and operated under these conditions will be more representative of the potential failure likelihoods expected for such a facility. It is expected that this likelihood will be much lower than those used in the evaluations of the scenario in the EPA Assessment.[96]

Unfortunately, EPA has published a litany of statistics in its Assessment to posit "Probabilities and Consequences of Potential Failures in the Mine Scenario."[97] These statistics address risks associated with a broad range of possible failures (including pipeline, culvert and water management system failures). However, EPA has relied on historical performance – often for operations and facilities in different countries, operating environments, eras and industries – to predict the performance of a modern U.S. mine in the United States in the 21st century. As a result, the risk estimates are inherently flawed.

A permit review process under the CWA and NEPA would include defensible, science-based risk assessments for all contemplated facility and operating failures associated with mine development, and would consider project and site-specific mitigation strategies to avoid, minimize and respond to such events. Where failures are deemed possible by regulators, project proponents must demonstrate that the associated environmental effects can either be avoided or

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[96] *Id.* at 202.
[97] *Assessment*, Executive Summary, at 19.

are minor, localized, temporary and remedial. Projects with the potential for unacceptable environmental effects will not be permitted.

EPA should therefore wait for a proposed development plan for the Pebble Project to be submitted and comprehensively and scientifically reviewed under the CWA and NEPA before attempting to assess risks involved with TSF embankments or other project facilities and operations.

B. The Development Footprints Associated with the Assessment's Speculative Mine Scenarios Greatly Overstate the Footprint Impacts

Direct (or footprint) effects associated with the Assessment's mine scenarios are entirely speculative, as PLP has not yet proposed a development plan for Pebble nor applied for permits to construct a mine. An agency's own speculation does not provide a sufficient factual record on which to base a major regulatory decision. Agency action cannot be "based solely on speculation and not supported by record evidence . . . which the government had ample time to procure."[98] EPA is impermissibly trying to base a 404(c) action on its own speculation when it has an opportunity, and obligation, to consider robust, project-specific data through the established CWA permitting and EIS process. The Assessment does not constitute the requisite "hard look" at the relevant evidence to "assure that the [A]gency did a careful job at fact gathering and otherwise supporting its position."[99] Taking action under section 404(c) based on EPA's speculation about the size of the project and its footprint impacts would constitute arbitrary and capricious decision-making.

Notwithstanding their speculative nature, footprint effects associated with the three mine scenarios presented in the Assessment – including the 34-square-mile footprint associated with EPA's largest scenario (Pebble 6.5) – are inconsequential when put into context of the overall Nushagak/Kvichak drainages and Bristol Bay region. In several importance instances, EPA estimates of project footprint impacts are also incorrect.

EPA estimates that key project facilities associated with mine scenarios presented in the Assessment (open pit, tailings and waste rock storage facilities) together comprise between 4 and 34 square miles.[100] However, all of the Assessment's project footprint estimates represent an exceedingly small proportion of the total Bristol Bay region and Nushagak/Kvichak watersheds.

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[98] *Chen v. U.S. Dep't of Justice*, 426 F.3d 104, 111 (2d Cir. 2005).
[99] *New Mexico ex. rel Richardson v. Bureau of Land Mgmt*, 565 F.3d 683, 704 (10th Cir. 2009).
[100] *Assessment*, Executive Summary, at 11.

TABLE 4
EPA Estimated Mine Scenario Footprint Areas as a Percent of Nushagak and Kvichak Drainages, and total Bristol Bay Watershed

EPA Mining Scenario	Estimated Footprint (EPA)	% of Total Bristol Bay Watershed Area	% of Nushagak/Kvichak Watershed Areas
Pebble 0.25	4 square miles	0.009%	0.017%
Pebble 2.0	13 square miles	0.03%	0.06%
Pebble 6.5	34 square miles	0.08%	0.15%

Given these modest footprint areas in the context of the broader region and regional watersheds, impacts on regional habitat and ecosystem functions are expected to be non-detectable.[101]

The Assessment also estimates that footprint effects associated with its mine scenarios would impact between 1,300 and 5,350 acres of wetlands, ponds and lakes, with wetlands comprising about 92 percent of this total.[102] Again, with no development plan proposed, EPA's footprint estimates on wetlands are speculative. More importantly, these estimated effects on wetlands are inconsequential when put into a regional context and the State of Alaska as a whole. Overall, some 43 percent of lands in the State of Alaska (or 175 million acres) are considered wetlands, as opposed to about 5 percent of lands in the Lower 48 states. According to the US Fish and Wildlife Service, about 56 percent of lands in physical subdivisions of Alaska that comprise some portion of the Bristol Bay region (or 36 million acres) are considered wetlands.[103]

TABLE 5
EPA Estimated Wetlands Affected by Mine Scenario Footprints as a Percent of Bristol Bay Watershed & Total Alaska Wetlands

EPA Mining Scenario	Assumed Wetlands Affected	% of Alaska Wetlands	% of Bristol Bay Wetlands
Pebble 0.25	1,300 acres	0.0007%	0.004%
Pebble 2.0	3,230 acres	0.002%	0.009%
Pebble 6.5	5,350 acres	0.003%	0.015%

[101] It is also important to note that lands affected by the project footprint will only be alienated during the period of mine operations. Following mine closure and reclamation, a majority of affected areas will be returned to beneficial use, including use as aquatic and terrestrial habitat.
[102] *Assessment*, Executive Summary, at 14.
[103] U.S. Fish & Wildlife Service, Status of Alaska Wetlands, at 20 (1994), *available at* http://www.fws.gov/wetlands/Documents/Status-of-Alaska-Wetlands.pdf.

As Table 5 demonstrates, given the overall wetlands habitat availability, direct (footprint) project effects on wetlands associated with the three mine scenarios presented in EPA's Assessment are insignificant.

EPA estimates that the footprint of the three mine scenarios presented in the Assessment would directly affect between 24 and 94 miles of streams, including 5 to 22 miles of stream habitat for salmon and resident fish.[104] However, it appears EPA inflated the stream lengths directly affected by each of its mine scenarios by as much as 35 percent. Based on 2012 U.S. Geological Survey ("USGS") data, streams that underlie the Assessment's three mining scenarios actually have a combined length of between 20 and 70 miles (as shown in Table 6 below).

As noted previously, PLP studies have shown that aquatic habitat at the upper reaches of the three streams surrounding Pebble – those areas most likely to be affected by the project's footprint – either are not utilized by fish or support low to very low densities of fish.[105] While some areas may support spawning and rearing habitat for small numbers of anadromous and resident fish populations, the availability of such habitat is not a limiting factor for any of these fish populations, and thus "unacceptable effects" to ecosystem fish production would not occur.

More importantly, the streams that underlie the footprint of EPA's three mine scenarios represent an exceedingly small proportion of total stream miles in the Bristol Bay region and Nushagak/Kvichak drainages. Given the location of these water courses at the extreme upper reaches of three tributary streams to the Nushagak and Kvichak river systems, they represent an even smaller proportion of total fish habitat in the region and include no critical habitat required to support regional fish populations or fisheries.

TABLE 6
Comparison of EPA and USGS Stream Length Estimates Affected by Mine Scenario Footprints as a Percent of Stream Lengths in Local and Regional Watersheds

EPA Mining Scenario	Stream length affected by project footprint (EPA)	% of Bristol Bay	% of Nushagak/ Kvichak Watersheds	Stream length affected by project footprint (USGS)	% of Bristol Bay	% of Nushagak/ Kvichak Watersheds
Pebble 0.25	24 miles	0.05%	0.08%	20 miles	0.04%	0.07%
Pebble 2.0	55 miles	0.11%	0.19%	49 miles	0.1%	0.17%
Pebble 6.5	94 miles	0.2%	0.33%	70 miles	0.15%	0.24%

[104] *Assessment*, Executive Summary, at 13.
[105] PLP, Environmental Baseline Document, at Ch. 15.

Given these negligible footprint impacts on stream lengths in the context of the broader Bristol Bay region and regional watersheds, overall impacts on fish populations and the regional fisheries they support would be non-detectable.

Although the Assessment does not attempt to quantify footprint and other project effects on Bristol Bay fish populations and fisheries, PLP is confident that, had EPA undertaken this quantification process, footprint effects associated with the Assessment's three mine scenarios would have resulted in a *de minimis* (or undetectable) impact on Bristol Bay fish populations and regional fisheries. This is particularly so given that about three-quarters of the stream miles affected by EPA's project footprints do not support fish at all, while the other one-third to one-quarter are considered low- to medium quality habitat, characterized by low fish densities and poor production.

The Assessment provides no evidence that even the maximum footprint impact inferred by EPA – that is, Pebble 6.5 affecting 1/3 of 1% of total Nushagak and Kvichak stream lengths – would result in a *significant adverse effect* on Bristol Bay fishery areas. This is particularly the case once compensatory mitigation for unavoidable effects on aquatic habitat is considered.

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The Pebble Partnership is aware that mine development at Pebble will unavoidably impact some aquatic habitat via direct (footprint) impacts and stream flow changes, although to a much lesser extent than EPA has suggested in its Assessment. Once compensatory mitigation measures are fully considered (see Section III.C below), as they certainly will be as part of the EIS process under NEPA, a project like Pebble has the potential to *increase* aquatic habitat availability and productivity in the region.

Furthermore, and as discussed above, PLP will propose a project designed and operated to modern engineering standards and utilizing the most progressive and protective environmental management systems and approaches, in order to minimize any risks of water quality effects or operational failures.

Fish and aquatic habitat studies undertaken by PLP over the past decade indicate that, on average, there are 1,298 acres of preferred stream habitat in the South and North Fork Koktuli and Upper Talarik Creek drainages combined.[106] This estimate includes spawning and rearing habitat for seven species of anadromous and resident fish species.

When habitat effects associated with the PHABSIM-derived surplus water release strategy discussed in Section III(A)(1) of this submission are considered, the total area of stream habitat in these three drainages that would continue to exist is 1,293 acres. That is just five acres less than pre-development conditions, and indicates that more than 99.6% of the preferred fish habitat availability in the three tributary streams surrounding Pebble – North and South Fork Koktuli and Upper Talarik Creek – will remain intact.

If one considers that preferred fish habitat availability in the North and South Fork Koktuli and Upper Talarik Creek drainages is typical of habitat availability in the broader

[106] *See, e.g.*, PLP, Environmental Baseline Document.

Nushagak and Kvichak watersheds and Bristol Bay region (a conservative assumption), the 'uncompensated' effect of the modelled mine scenario on total fish habitat availability is even more minute. A five acre loss means that 99.993% of total preferred habitat availability in the Nushagak and Kvichak drainages would remain intact, as would 99.996% of preferred habitat in the broader Bristol Bay region.

This preliminary estimate of overall effects of mine development on aquatic habitat in the Pebble Project area stands in stark contrast to the conclusions and inferences made in the Assessment. It demonstrates that, even before compensatory mitigation, a modern mine developed at Pebble can have very negligible aquatic habitat impacts. Moreover, the aquatic habitat to be affected by footprint effects and flow changes associated with mine development at Pebble exists at the very upper reaches of these tributary streams, where fish abundance and habitat productivity are low.

Nonetheless, and as described in the section below, the Pebble Partnership intends to compensate for these minor aquatic habitat effects at a multiple to their impact, by enhancing both the quality and quantity of anadromous and resident fish habitat (both spawning and rearing) in local drainages and throughout the Nushagak and Kvichak watersheds.

C. The Assessment does not Account for Compensatory Mitigation Measures

EPA's Assessment fails meaningfully to address compensatory mitigation, which is a critical component of a mine proposal and will serve to offset unavoidable project effects on aquatic habitat and wetlands.

The Assessment does not provide any compensatory mitigation for EPA's estimated unavoidable impacts to aquatic resources associated with its mine scenarios. EPA explains that because "[t]he Bristol Bay Assessment is not a regulatory action[,] . . . a complete evaluation of compensatory mitigation is outside the scope of the assessment."[107] However, compensatory mitigation is a critical component of CWA permit decisions, and is a factor that must be considered in any Section 404(c) decision. As EPA and the Corps have explained, "compensatory mitigation is a critical tool in helping the federal government to meet the longstanding goal of 'no net loss' of wetland acreage and function."[108]

In Appendix J of the final Assessment, EPA provides an overview of the mitigation requirements of the Clean Water Act. In this Appendix, EPA makes several important statements:

- This appendix [Appendix J] provides an overview of Clean Water Act Section 404 compensatory mitigation requirements for unavoidable impacts to aquatic resources, and discusses an array of measures that various entities have proposed as having the potential to compensate for the

[107] *Assessment*, Appendix J, Compensatory Mitigation and Large-Scale Hardrock Mining in the Bristol Bay Watershed, at 2; *see also Assessment*, at Box 7-2 (same).
[108] Compensatory Mitigation for Losses of Aquatic Resources, 73 Fed. Reg. 19,594 (Apr. 10, 2008).

unavoidable impacts to wetlands, streams, and fish identified in the Bristol Bay Assessment.[109]

- Compensatory mitigation regulations jointly promulgated by EPA and the ACOE [U.S. Army Corps of Engineers] . . . state that "the fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States authorized by [Clean Water Act Section 404 permits issued by the ACOE].[110]

- In determining what type of compensatory mitigation will be "environmentally preferable," the ACOE "must assess the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project."[111]

- Compensatory mitigation can occur through four methods: aquatic resource restoration, establishment, enhancement, or in certain circumstances, preservation.[112]

What is significant about these statements is that EPA clearly acknowledges that: 1) mitigation for unavoidable impacts is permitted under the Clean Water Act; 2) compensatory mitigation is required to offset environmental losses; 3) it is the responsibility of the Corps to determine if compensatory mitigation is environmentally preferable and will likely be ecologically successful and sustainable; and 4) four categories of mitigation are available to meet the objectives of the Clean Water Act – including enhancement of existing aquatic resources. Unfortunately, EPA chose not to consider compensatory mitigation in its Assessment process.

EPA also acknowledges in Appendix J that a wide array of potential compensatory mitigation measures was recommended by Peer Reviewers and members of the public in their comments on the Assessment. However, EPA ultimately concludes:

> In the context of the mine scenario, the primary challenge to both a watershed approach and on-site compensatory mitigation is the absence of existing degraded resources and watershed needs within the NFK, SFK and UTC watersheds. Specifically, these three watersheds are largely unaltered by human activities, and there appear to be no sites that a mitigation project could restore or enhance to offset the magnitude of impacts expected from the mine scenarios.[113]

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[109] *Assessment*, Appendix J, at 2.
[110] *Id.* at 2-3 (internal citations omitted).
[111] *Id.* at 3 (internal citations omitted).
[112] *Id.*
[113] *Id.* at 13.

On its face, this response ignores decades of successful salmon and resident fish habitat enhancement projects undertaken in unimpaired rivers and smaller streams throughout Alaska, British Columbia, the Pacific Northwest and Northern California.[114]

Subsequently, EPA argues that there are "significant challenges regarding the potential efficacy, applicability and sustainability of compensation measured proposed by commentators for use in the Bristol Bay region, raising questions as to whether sufficient compensation measures exist that could address impacts of the type and magnitude described in the Bristol Bay Assessment."[115] However, EPA's position that insufficient evidence exists to demonstrate the efficacy, applicability and sustainability of aquatic habitat enhancement projects is not supported, as evidenced by two major scientific reviews recently published, which summarize the results of hundreds of individual studies on the matter.

Both the United Nations' Food and Agriculture Organization review entitled *Habitat Rehabilitation for Inland Fisheries: Global review of effectiveness and guidance for rehabilitation of freshwater ecosystems* (2005), senior authored by the National Marine Fisheries Service ("NMFS"), and *Benefits of Tributary Habitat Improvement in the Columbia River Basin: Results of research, monitoring and evaluate 2007 – 2012* (2013) commissioned by the Bonneville Power Administration (BPA) and Bureau of Reclamation, conclude that the types of compensatory mitigation projects that will ultimately be proposed by PLP to offset unavoidable impacts on aquatic resources "proved effective in improving habitat and increasing local fish abundance in many circumstances."[116]

In particular, these major reviews demonstrate that the development of new in-stream structures to enhance habitat complexity and the creation or re-connection of side channels or off-stream habitats have a well-established and documented track record for improving existing salmonid and resident fish habitat, as well as creating significant new habitat areas. Both approaches have widespread applications in the watersheds surrounding the Pebble deposit.

The 2013 Bonneville Power Administration/Bureau of Reclamation Study, states:

> Addition of in-stream structures such as logs and rocks is one of the most established, widely accepted and most well-studied forms of habitat improvements. Most studies have found a positive response by juvenile salmonids . . . .[117]
>
> Reconnection and improvement of off-channel habitat may include reconnecting existing side channels or wetlands or constructing

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[114] Exhibit C, Memorandum from Ecofish Research, Ltd., to Bruce Jenkins, Literature Review of Successes and Efficacy of Fish Habitat Restoration and Compensation Projects in British Columbia (Apr. 25, 2014) [hereinafter Ecofish Literature Review]; Exhibit D, J. W. Buell, Ph.D., & R.E. Bailey, M.S., *Mitigation and EPA's Bristol Bay Watershed Assessment Final Assessment* (Apr. 23, 2014).

[115] *Assessment*, Appendix J, at 38.

[116] Benefits of Tributary Habitat Improvements in the Columbia River Basin, Results of Research, Monitoring and Evaluation 2007 – 2012, Bonneville Power Administration, Bureau of Reclamation, at 13 (July 2013).

[117] *Id.* at 25.

> new ones. . . . Studies indicate that side channels have untapped capacity to support salmonids and have consistently shown that salmonids quickly recolonize such newly accessible habitat as they do following barrier removal.[118]

The 2013 Bonneville Power Administration/Bureau of Reclamation Study, in particular, is notable because it documents the success of a large-scale and decades-long fish habitat restoration and enhancement program. The Columbia Basin Fish and Wildlife Program ("CBFWP") implemented by BPA, constitutes the largest, single program of sustained commitment by federal and state government agencies (including EPA), Native American tribes and the public to salmon and resident fish habitat mitigation and enhancement, and provides a powerful example of the kind of results that could be achieved at Pebble.

Over the past 30+ years, some $2.8 billion has been invested in CBFWP programs, some 20 – 40 percent of which are dedicated to habitat programs. For the 20-year funding cycle from 2004 – 2025, nearly $1.5 billion is earmarked for investment in habitat restoration, enhancement and protection, with a further $963 million to be spent on monitoring and evaluation of the effectiveness of mitigation and enhancement efforts. This year alone, $238 million will be spent on habitat restoration, enhancement and protection, with a further $86 million to be spent on monitoring and evaluation. With so many public institutions and government agencies involved as funding partners (including EPA), demonstrating the success of aquatic habitat enhancement efforts is an important focus for the CBFWP program.[119]

Between 2005 and 2013 alone, the CBFWP enhanced in-stream habitat complexity and channel form for salmonid and resident fish species over almost 400 stream miles, while creating 47 miles of new habitat by creating or re-connecting off-channel habitat. The program also created, restored or enhanced some 4,300 acres of wetlands habitat.[120] The CBFWP example is wholly relevant to Pebble – including: the scale of the project; its duration over decades of operations; the commitment of stable funding and scientific resources; its collaboration between regulatory agencies, Native stakeholders and the broader public; as well as its commitment to measuring results against dollars invested and commitments made.

EPA cites studies in the Assessment to bolster its claim that the efficacy of aquatic habitat enhancement projects is unknown. However, the author of one of those studies, Jason Quigley, a biologist formerly with Fisheries and Oceans Canada, takes issue with EPA's dismissal of the effectiveness of compensatory mitigation.

> The studies I conducted into the effectiveness of aquatic habitat enhancement projects in Canada (*Harper and Quigley* 2005; *Quigley and Harper* 2006) did not conclude these programs were an ineffective means to compensate for the unavoidable effects of development activities on aquatic habitat.... In fact, what we found is that aquatic habitat compensation projects that are planned

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[118] *Id.*
[119] *See* Exhibit C, Ecofish Literature Review, at 4-6.
[120] *Id.* at 6.

> appropriately and implemented properly have been exceptionally successful in achieving net gains in habitat productivity.[121]

Quigley notes that most of the aquatic habitat projects in Canada he studied that did not achieve their enhancement objectives suffered from poor planning, insufficient funding and a lack of monitoring, maintenance and regulatory oversight. When compensation ratios are set at 2:1, fully 81% of projects studied achieved a net gain or no net loss in habitat productivity without any other improvements to compensation techniques.

> Compensatory mitigation projects that have a stable funding source, a multi-year and even decades long commitment, strong scientific underpinnings and effective regulatory oversight – that is, strong institutional foundation as one would expect at Pebble – have excellent prospects for success.[122]

When it comes to Pebble, PLP has identified multiple opportunities to create or re-connect off-channel habitat areas in the immediate project vicinity that will more than offset aquatic habitat losses associated with the project footprint. It is also likely that Pebble will propose the introduction of other measures including new in-stream structures in off-channel habitats to enhance habitat complexity, quality and productivity in the immediate project area and thereby enhance fish productivity in existing streams.

PLP's third-party fisheries scientists are confident that these two approaches to compensatory mitigation alone will more than offset the Pebble Project's unavoidable impacts on aquatic habitat on a 'like-for like' basis in the immediate project area. By creating or re-connecting off-channel habitat areas, spawning and rearing habitat availability for every anadromous and resident fish species present in the project area will either be maintained or enhanced. By enhancing habitat complexity, overall habitat quality will be improved. These 'like-for-like' results will be achieved within the same watershed area in which the Pebble Project is located.

But PLP also assumes that regulatory agencies will stipulate that unavoidable impacts to aquatic habitat at Pebble require compensatory mitigation at a multiple to the habitat area affected. In order to meet regulatory and public expectations in this regard, PLP's third-party fisheries scientists have assembled a large catalogue of potential habitat enhancement projects throughout the Nushagak and Kvichak drainages with the potential to create as much as 20,000 additional acres of spawning and rearing habitat for anadromous and resident fish species. This is far in excess of the project's footprint effects in the South and North Fork Koktuli and Upper Talarik Creek drainages.

EPA statements in the Assessment that "opportunities for restoration or enhancement are very limited, and . . . likelihood of success appears to be very low"[123] are demonstrably false. So

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[121] Exhibit E, Letter from Jason Quigley, Hunter Dickinson, Inc., to Dennis McLerran, Regional Administrator, EPA (Apr. 28, 2014).
[122] *Id.*
[123] *Assessment*, Appendix J, at 13.

too is its objection that there are "significant challenges regarding the potential efficacy, applicability and sustainability"[124] of the habitat enhancement projects most likely to be proposed by PLP as compensatory mitigation for unavoidable impacts on aquatic resources.

Compensatory mitigation for wetlands unavoidably impacted by mineral development at Pebble will require the flexibility provided by federal and state regulation to compensate for affected areas by restoring or enhancing wetlands ecosystems, fish habitat and migratory bird habitat in other locations.

Alaska's wetlands estate – which comprises the vast majority of America's total wetlands – is almost wholly intact. As such, the relatively modest footprint effects on wetlands predicted by EPA in its Assessment would not have any discernible effect on overall wetlands habitat availability and ecosystem function in the region.

However, the obligation for compensatory mitigation to offset unavoidable impacts to wetlands presents an opportunity for PLP to contribute to important wetlands ecosystem, fish habitat and migratory bird habitat restoration or enhancement projects in other regions of Alaska and/or the Lower 48 states. Many of these important projects' conservation and habitat enhancement goals would be materially advanced by contributions on the scale that Pebble developers are likely to make. Many would also benefit migratory bird species for which the Bristol Bay region provides summer breeding and nesting grounds, but for which critical over-winter grounds found outside of Alaska is often in need of remediation and/or enhancement.

While the Assessment has not meaningfully addressed compensatory mitigation for either aquatic habitat or wetlands, EPA acknowledges that it is the responsibility of the Corps to determine what type of compensatory mitigation will be "environmentally preferable,[125] the likelihood for ecological success and sustainability, the location of compensation sites relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project. As such, EPA should await the submission of a proposed development plan for the Pebble Project and the completion of the EIS process under NEPA, including finalization of detailed compensatory mitigation plans to offset unavoidable impacts on aquatic habitat and wetlands, before taking any regulatory action under section 404(c) of the Clean Water Act.

D. The Assessment Does Not Demonstrate that the Pebble Project Presents Unacceptable Adverse Effects on Fisheries

From the outset of the Bristol Bay Assessment study process, EPA scoped its assessment of potential effects associated with mineral development in Southwest Alaska much more narrowly than an EIS process under NEPA. Specifically, EPA focused its Assessment on three end-points: "potential impacts of large-scale mine development on Bristol Bay fisheries and consequent effects on wildlife and Alaska Native cultures in the region."[126]

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[124] *Id.* at 38.
[125] *Id.* at 3.
[126] *Assessment*, Executive Summary, at 2.

However, as expressed above, the Assessment does not quantify the impact of the mine scenarios on any regional fishery – commercial, sport or subsistence. The Assessment also fails to quantify any impact of the mine scenarios on regional wildlife or Alaska Native cultures. Given these critical failures, it is difficult to understand how the Assessment can provide scientific support for a determination whether mineral development in the Nushagak and Kvichak watersheds presents an unacceptable adverse impact on fishery areas in the region. This fact was stressed by peer reviewers of the Assessment:

> The assessment tells us that the consequences of loss and degradation of habitat on fish populations could not be quantified because of the lack of quantitative information concerning salmon, char, and trout populations. Furthermore, we learn that indirect effects, such as risks to wildlife, cannot be quantified. Stating that reduced salmon production would reduce the abundance and production of wildlife is accurate but not appropriate for a document that is intended to provide a scientific and technical foundation for future decision making.[127]

Thus, while the Assessment predicts certain impacts of mineral development on aquatic habitat, it provides no causal linkage between these impacts and the Pebble Project. For this reason, EPA has not demonstrated that the Pebble Project will cause unacceptable adverse impacts on fishery areas in the Nushagak and Kvichak watersheds.

Moreover, the scientific inputs used by EPA in its Assessment are less exhaustive and of overall lower quality than those to be used in an EIS process under NEPA. A Corps-prepared EIS following submission of a detailed mine development proposal will define scientifically defensible and quantifiable impacts of mine development on fisheries, wildlife and Alaska Native communities, and will also forecast impacts for a much broader range of important environmental, social and economic values. For example, Pebble Partnership has developed an Environmental Baseline Document (EBD) – a 27,000-page compendium of scientific information collected in the Pebble Project area over a period of eight years at an estimated cost of $150 million. The EBD is without doubt the most comprehensive, exhaustive and relevant source of environmental data associated with the Pebble Project site. The EBD will be fully available to the Corps and EPA as part of the NEPA review of a 404 permit application, and thus provides another compelling reason why EPA should await the NEPA process.

Full use of Pebble's EBD data would have improved the scientific integrity of the Assessment. This is certainly the case for aquatic habitat and fish abundance and density issues, but also for virtually every other environmental value in the region – including the critical issues of water and water quality. This point is made clear by multiple interactions between EPA and the experts it retained to peer review the Assessment. For example, Peer Reviewer Steve Buckley wrote in relation to the second 2013 draft of the Assessment: "The assessment identifies the interconnectivity of groundwater, surface water, and fish habitat as being a major component of the quality of the fishery in the watershed yet puts relatively little effort into the analysis of the detailed relationships between groundwater, surface water, water quality, and fish habitat, even

[127] Response to Peer Review Comments, at 215.

though this is likely the most important factor in assessing the potential impacts of mining activities on the fisheries in the watershed."[128] EPA responded: "We lack the data to demonstrate this interconnectedness."[129]

In fact, Pebble's EBD data would allow regulatory agencies to demonstrate and model interactions between groundwater, surface water and aquatic habitat under various mine scenarios. Such modeling will be undertaken by the Corps as part of the EIS process under NEPA, resulting in estimates of project effects on downstream water quality and aquatic habitat that are much more scientifically defensible than EPA's projections in its Assessment.

There are multiple examples where publicly available scientific data related to fish and fish habitat near the Pebble Project site were overlooked by Assessment authors. As detailed in recent correspondence from NDM to EPA's Inspector General, this disregarded information includes:

- the 2005 NDM progress report on fish resource/habitat studies, including sampling locations, fish catch and distribution data, and fish density plots;
- fish distribution, relative abundance, and fish density information from the Alaska Department of Fish and Game (ADFG) and J.W. Buell and Associates, both of which are publicly available and on ADFG's Freshwater Fish Inventory Website;
- data from fish collection permits issued by ADFG to private consultants of PLP, which is publicly available;
- data and information presented at the annual agency meetings, which included summary information and adult salmon population spawning escapement estimates; and
- information and data presented at a June 12, 2008, PLP/Agency Fish Technical Working Group meeting in Anchorage, which included an overview of all the studies conducted near the Pebble deposit including specific information on fish distribution and relative abundance.[130]

EPA's failure to consider the best available information on aquatic habitat and fish populations in the Pebble Project area led EPA to mischaracterize fish spawning locations and fish density in the Pebble deposit area, among other important considerations.[131] As noted in PLP's 2013 comments on the Assessment:

> EPA drew the wrong conclusions regarding adult salmon spawning distribution and relative ecological importance by failing to examine site specific and publicly available data on the habitat conditions, fish species distribution, and densities of juvenile salmonids found in their mine development impact areas. . . . For example, EPA concluded that salmon spawn above Frying Pan Lake in the South Fork of the Koktuli, a conclusion that is not

[128] *Id.* at 49.
[129] *Id.*
[130] Letter from Richard E. Schwartz, Attorney for Northern Dynasty Minerals Ltd. to Arthur A. Elkins, Jr. Inspector General, EPA at 11 (Jan. 9, 2014) [hereinafter Jan. 9 Northern Dynasty Letter] (Exhibit F).
[131] NDM 2012 Public Comments, at 27-29.

> supported by available data. If EPA had completed an adequate evaluation of the public sources of information, it is likely that their conclusions regarding the overall ecological significance and magnitude of potential impact would have been different.[132]

Based on all of the above factors, EPA scientists have conceded that the Assessment is an inadequate basis for a decision on the Pebble Mine Project, and that a decision could only "be addressed through a regulatory process that is beyond the scope of this assessment."[133]

First, EPA acknowledges that a permit decision will require more comprehensive investigation. In the Response to Peer Review Comments, EPA admits that questions critical to deciding the fate of a permit application must await more in-depth, appropriate study. EPA intended the Assessment as a background document with no binding significance; in EPA's words, "[T]his assessment is based on available data and is intended as a background scientific document rather than a decision document."[134] Several comments refer to the need to conduct an EIS pursuant to NEPA before making a decision on a permit application.[135] An EIS would allow EPA to consider potential impacts; as EPA noted, "Any permit decision by the U.S. Army Corp of Engineers would need to comply with the National Environmental Policy Act, and a project of this scope would presumably require development of an Environmental Impact Statement, which would examine the full suite of potential impacts."[136] Other EPA responses accept gaps in the analysis because specific considerations "would be addressed through a regulatory process that is beyond the scope of this assessment."[137]

Second, the agency acknowledges that it cannot adequately quantify the potential impact on wildlife based on the Assessment. The Assessment concludes that large-scale mining would reduce the salmon population and thereby the abundance and production of wildlife but admits that neither direct nor indirect impacts on wildlife can currently be quantified. As EPA states, "We agree that the assessment is not a definitive quantified prediction of all impacts to salmon, wildlife, and Alaska Native cultures from large-scale mining."[138] EPA concedes the same for wetland and riparian impacts that would be necessary to evaluate a permit application:

> We agree that greater quantification of wetland and riparian losses is essential for the NEPA and permitting processes that oversee compensatory mitigation and "no net loss". This assessment is based on existing information (including wetland inventories) and,

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[132] *Id.* (internal citations and quotation marks omitted).
[133] *See, e.g.*, Response to Peer Review Comments, at 114-20, 237-44 (listing the factors requiring more in-depth regulatory review).
[134] *Id.* at 35; *see also Assessment*, Executive Summary, at 31 ("[The Assessment] is intended to provide a characterization of a the biological and mineral resources of the Bristol Bay watershed, increase understanding of the risks from large-scale mining to the region's fish resources, and inform future government decisions.")
[135] Response to Peer Review Comments at 215-25, 295, 341 (listing important factors that would require an EIS to determine full effects of any mining project).
[136] *Id.* at 341.
[137] *Id.* at 114-20, 237-44 (listing the factors requiring more in-depth regulatory review).
[138] *See, e.g., id.* at 254.

> as the commenter has pointed out, reveals the areas where existing information is lacking.[139]

Third, EPA admits that the Assessment does not address other considerations necessary to rule on an eventual project, such as compensatory mitigation and an alternatives analysis. Those detailed analyses, in addition to risk management decisions, evaluation of specific mine design, and a description of the specific minerals to be mined would, again, "be addressed through a regulatory process that is beyond the scope of this assessment."[140] One peer reviewer called EPA's attention to some of these other factors:

> There are many aspects of the development of a large mine project that need thorough review to ensure that habitats are protected. These include, but are not limited to: classification and storage of waste rock, lower grade ore, overburden, and high grade ore; development and maintenance of tailings storage facilities; development and concurrent reclamation of disturbed areas, including stripped areas and mine pits; collection and treatment of point and non-point source water; quantity and timing of discharges of treated water; monitoring of ground water, seepage water and surface water; and biomonitoring. The transportation corridor will require review and permitting of every stream crossing of fish-bearing waters.[141]

EPA acknowledges that the Assessment does not evaluate this key information that should be considered before deciding whether to veto or place limitations on a permit, stating: "EPA agrees that these aspects would need to be subject to a thorough review during the development and approval of a detailed mining plan."[142]

In sum, not only is the Assessment based on speculative mine scenarios that do not reflect international best practices, it is also based on data and analyses that are both less exhaustive and of lower overall quality than would be undertaken as part of an EIS process under NEPA. Indeed, EPA scientists' own characterizations undermine any attempt to use the Assessment as a basis of a Section 404(c) action on the Pebble Project. To take any action under 404(c), EPA must have a record clearly establishing "an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas."[143] The Assessment is not that record.

E. EPA's Procedures Before and During the Publication of the Assessment Demonstrate the Document's Bias

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[139] *Id.* at 266-67.
[140] *See, e.g.*, Response to Peer Review Comments, at 114-20, 237-244 (listing the factors requiring more in-depth regulatory review).
[141] *Id.* at 145.
[142] *Id.*
[143] 33 U.S.C. § 1344(c) (2012).

EPA's preparation for the Assessment and management of the peer review process further indicate a predetermined outcome of supporting a Section 404(c) veto by any means necessary. Before the Assessment even began, EPA personnel were preparing for a veto, and the substance and procedures of the peer review process continued work toward that goal.

1. The Outcome of the Assessment was Predetermined to Support a Section 404(c) Veto

EPA claims that it undertook the Bristol Bay watershed assessment process in response to tribal petitions asking EPA to veto mining of the Pebble Deposit in 2010.[144] Documents obtained under the Freedom of Information Act ("FOIA") show that EPA had in fact been laying the groundwork for a veto under Section 404(c) on its own initiative for a considerable amount of time. Starting in July 2008, EPA personnel worked closely with mine opponents and lobbied other agencies to support a veto.[145] The Assessment was merely a tool to support EPA's predetermined goal: to kill the Pebble Project. This letter cannot detail the full extent of EPA's efforts, but NDM's correspondence with EPA's Inspector General set forth the full facts and are provided as Exhibit G.

As early as June 2008, Phillip North, an ecologist in EPA Region X and one of the authors of the Assessment, had begun investigating a Section 404(c) veto for the Pebble Project.[146] North began a steady campaign, including planning a mini-retreat devoted to discussing Pebble, writing about the "catastrophic failure" certain to result from a mine, and communicating with attorneys for mine opponents.[147] In one email to a mine opponent, North even wrote, "We have been discussing 404(c) quite a bit internally at all levels of EPA. This letter will certainly stoke the fire. I look forward to talking with you in the near future."[148] North was clearly working with the mine opponents to sway EPA policy, hardly the role of an objective ecologist.

Communication between EPA officials and environmental groups about the mine became nearly constant. One attorney for the mine opponents in particular regularly advised North and others on EPA policy, law, and strategy.[149] This collaboration came at the expense of communication with the State of Alaska and PLP. EPA did not even officially inform PLP of the tribes' petition; PLP found out through an LA Times article in which EPA and mine opponents gave interviews.[150] When PLP CEO John Shively asked Region X administrator Dennis McLerran for an update on the petitions in early 2011, McLerran initially agreed to arrange a meeting but instead announced to the public – without informing Shively – that EPA would initiate the Assessment.[151] EPA only shared information on the process with the State one month prior to announcing the Assessment and after having worked extensively with environmental

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[144] *Assessment*, at 1-2.
[145] For a more complete picture of the level of collaboration between EPA personnel and dedicated mine opponents, see Letter from Richard E. Schwartz, Attorney for Northern Dynasty Minerals Ltd. to Arthur A. Elkins, Jr. Inspector General, EPA (Mar.19, 2014) ("Mar. 19, 2014 Northern Dynasty Letter") (Exhibit G).
[146] *Id.* at 2 (citing an email in which North requested information that had "bearing on my 404 review").
[147] *Id.* at 2-4.
[148] *Id.* at 5.
[149] *Id.* at 10.
[150] *Id.* at 14.
[151] *Id.* at 28.

groups and other federal agencies for a period of 9 months.[152] PLP and Alaska are clearly two of the most important stakeholders in any decision made with respect to Section 404(c), and yet they were left almost completely in the dark as North and his allies formulated policy.

Having found traction in EPA and among mine opponents, North then took his advocacy to other federal agencies, enlisting the support of the U.S. Fish and Wildlife Service ("USFWS"). The collaboration seemed to make a veto a foregone conclusion; one USFWS internal memorandum dated October 1, 2010, was titled, "EPA to Seek Service Support *When* They Use Section 404(c) of the Clean Water Act."[153] One USFWS official prepared for a meeting with North by saying, "No need to talk about how bad the mine would be because everyone understands this. We need to focus on FWS role and what EPA wants from us."[154]

In sum, the Assessment was just a pretense, initiated after EPA had already begun working toward a Pebble Project veto. Agency personnel had already considered how one benefit of conducting a study prior to initiating the 404(c) process would be that "starting in a neutral position can deflect political backlash."[155] EPA's predetermined goal colored the entire Assessment process and guaranteed a biased result. The Information Quality Act requires federal agencies to maximize "the quality, objectivity, utility, and integrity" of the information they create, collect, and disseminate.[156] A process that began with a predetermined agenda and effectively only involved one set of stakeholders cannot be an objective one. In short, the Assessment ran afoul of scientific integrity before it even began.

2. The Flawed Peer Review Processes Undermine the Assessment's Credibility

The peer review process casts significant doubt on the ultimate quality, utility, and scientific integrity of the Assessment. There were actually multiple peer reviews, and each one demonstrated that the Assessment lacks a sound scientific basis to justify a hastened decision-making process. For the peer reviews of the 2012 and 2013 Draft Assessments, EPA manipulated the process and short-circuited traditional review procedures to minimize criticism. Several reports authored by mine opponents on which EPA heavily relied in 2012 were also peer reviewed. Unannounced to the public prior to its occurrence, the peer review uncovered several scientific flaws in the data EPA was incorporating into the Assessment. As a result of these flaws of both substance and process, the Assessment lacks the quality and credibility of a properly designed, peer-reviewed study. In fact, the questions raised in the peer review process of the Draft Assessment make clear that this flawed study is not a legitimate basis for a major regulatory decision such as a Section 404(c) veto. As discussed above, even EPA admits the Assessment is not "a decision document." This section discusses how these peer review flaws undermine the credibility of the Assessment.

a. EPA Selectively Peer Reviewed and Incorporated Biased, Anti-Mining Reports

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[152] *Id.* at 29.
[153] *Id.* at 8 (emphasis added).
[154] *Id.*
[155] Exhibit A, EPA, Bristol Bay 404(c) Discussion Matrix, HQ Briefing, at 2 (Sept. 8, 2010).
[156] 44 U.S.C. § 3516.

After issuing the 2012 draft of the Assessment, EPA conducted a peer review of seven reports on which it had based many of the findings. According to the Assessment, "[o]ther non-governmental organizations have collected data relevant to the assessment. USEPA subjected some of these documents to external peer review and, where defensible, we have incorporated this information into the assessment."[157] However, EPA never notified the public that these peer reviews were occurring and did not explain the rationale behind selecting these particular reports.[158]

Peer reviewers found evidence of bias and inadequate scientific support for each of the reports used. Examples of specific criticism include the following:

- Bias of Authors and Findings
  - "I find the report, by its nature, to be very biased."[159]
  - This report "is clearly intended to convince the reader that the Pebble Mine should not be permitted to operate" and "lacks impartiality."[160]
  - "[T]he writing and tone of the report suggests less than an objective approach."[161]
  - "[S]ome of the comments read like editorial opinions rather than reporting scientific results."[162]

- Faulty Methodology
  - "There is no discussion section at all where results are qualified and discussed, and the conclusion section has an array of new methods, results, and discussion, with no specific conclusions identified."[163]
  - "Because of the lack of statistical proof that the core findings of their presentation (e.g., 25 case studies) are representative for all past and future mines, the value of this report for the EPA assessment is questionable."[164]

- Reliance on Antiquated Mining Practices
  - "These cases affect the statistics but do not allow modern design practices and operations in well regulated environments to be fully appreciated."[165]

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[157] Assessment, at 2-3.
[158] Jan. 9, 2014 Northern Dynasty Letter, at 18.
[159] Final Peer Review Summary Report: External Peer Review of Kuipers et al. 2006 (Comparison of Predicted and Actual Water Quality at Hardrock Mines) and Earthworks 2012 (U.S. Copper Prophyry Mines Report) at 20 (Nov. 15, 2012) ("Earthworks Review").
[160] Final Peer Review Summary Report: External Peer Review of Chambers and Higman 2011 (Long Term Risks of Tailing Dam Failure) and Levit and Chambers 2012 (Comparison of the Pebble Mine with Other Large Hard Rock Mines) at 20-21 (Dec. 30, 2012) ("Chambers Review").
[161] Final Peer Review Summary Report: External Peer Review of Wobus et al 2012: Potential Hydrologic and Water Quality Alteration from Large-scale Mining of the Pebble Deposit in Bristol Bay, Alaska, at 4 (Nov. 2, 2012) ("Wobus Review").
[162] *Id.* at 5.
[163] Final Peer Review Summary Report: External Peer Review of Woody and O'Neal 2010 (Fish Surveys in Headwater Streams of the Nushagak and Kvichak River Drainages Bristol Bay, Alaska, 2008-2010) and Woody and Higman 2011 (Groundwater as Essential Salmon Habitat in Nushagak and Kvichak River Headwaters: Issues Relative to Mining), at 5 ("Woody Review").
[164] Earthworks Review at 18.
[165] Chambers Review at 4.

- "[T]hat we can expect a similar or worse track record for a new mine is, however, not supported by the information presented."[166]
- "[S]ummary table only describes old mines – where environmental requirements might have been less stringent than today."[167]

- Unsupported Conclusions
  - "[S]ome of the language is a bit alarmist and not based on presented data."[168]
  - "There was no discussion of impact assessment methodology or documentation of an environmental assessment, which would be needed to attain the stated purpose."[169]

Despite this robust criticism, however, EPA based the 2013 Assessment on these same reports and only omitted references to two of the reports in the final Assessment when one of the co-authors became embroiled in controversy related to intentional misrepresentations of scientific findings.[170]

EPA's continued reliance on these reports despite the peer review criticism weakens the substantive value of the peer review process and draws the entire Assessment into question. Even peer reviewers of the Assessment itself noted how the selection of these reports for peer review and inclusion weakened the Assessment:

> While the reports and reviews are provided for broad review, the value of the described external review will undoubtedly be questioned for its independence and credibility. It is also interesting to note that many reports from other credible sources were provided to the public record in 2012 but that none of them were apparently considered "useful" to EPA in their preparation of the Revised Draft. The author questions the objectivity of this process and therefore the overall scientific value of the review report by EPA.[171]

In EPA's response to comments document, the Agency states: "We used the best available science in the assessment, and have revised the assessment as better science became available."[172] EPA tries to dilute the criticisms of the bias of its sources by claiming that the Agency also used data in support of the mine's construction, such as the NDM Preliminary Economic Assessment.[173] However, as discussed above, the NDM Preliminary Economic

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[166] Earthworks Review at 24.
[167] *Id.* at 6.
[168] Chambers Review at 19.
[169] Woody Review at 4.
[170] Response to Public Comments, at 49-50 (describing how the Assessment omitted references to work by Dr. Ann Maest and asserting that the omission did not affect the quality of the Assessment).
[171] Response to Peer Review Comments, at 344.
[172] *Id.* at 33.
[173] *Id.* at 40 ("In particular, the two most used sources were Northern Dynasty Minerals' preliminary mine plan . . . and the Pebble Limited Partnership's Environmental Baseline Document . . .").

Assessment EPA evaluated is not nearly as comprehensive as what would be submitted for a permit application and as part of the NEPA review process.

b. The Peer Review Procedures Themselves Stifled Opportunities for Criticism

Another significant concern is the rushed nature and limited scope of the peer review procedures. For review of the 2012 Assessment, several commenters noted the short timeframe limited their ability to evaluate the document and findings sufficiently. Dr. van Zyl stated,

> My comments contained above and below are based on a single review of the report, i.e. contractual time constraints were such that I could not afford a second review of the report. It is therefore possible that there are other errors remaining in the report that I did not observe in my review.[174]

At an Open Meeting with EPA and the peer reviewers, speakers were limited to three-minute presentations and no written submissions.[175] EPA also circumscribed the review process by pre-selecting questions for the peer reviewers and rejecting Pebble Limited Partnership's attempts to broaden the inquiries.[176]

The 2013 Assessment likewise featured limited procedures for peer review. Several reviewers' comments indicate a limited scope and hasty execution of the peer review; one reviewer said the panel did not even receive copies of updated Appendices.[177] This made it difficult for peer reviewers to determine if their earlier comments had been addressed. One reviewer noted, "It should be noted that several of my first-round review comments were responded to by referring to changes made to appendices to the main report. However, without having these appendices to examine, it was impossible to assess whether my comments were adequately resolved in the revision process."[178] Another reviewer who believed the 2013 Assessment to be an improvement nonetheless pointed out problems with the peer review process:

> My 'review' of the larger main report . . . was limited to checking specific points, evaluating degree of incorporation of reviewers' 2012 recommendations to the revision, and gaining an overall impression of the present state of the draft assessment. The time allotted did not permit a truly comprehensive, paragraph-by-paragraph review of that document (nor was such review requested).[179]

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[174] Final Peer Review Report at 23.
[175] *Id.* at 3.
[176] *Id.*
[177] Response to Peer Review Comments, at 296 (noting "the peer review panel did not receive copies of revised Appendices.").
[178] *Id.* at 336 (comments of Dennis D. Dauble, Ph.D.).
[179] *Id.* at 340-41.

One reviewer discussed how the structure and operation of the peer review process limited meaningful scientific discussion:

> The pay rate and estimated time to complete the review were significantly less than original estimates. A concern also shared by other external reviewers. As much as I argued that the interdisciplinary approach experienced in Anchorage produced a better document review, EPA was not interested in allowing collaboration or wanting a 'consensus' opinion. . . . The purpose of any collaboration is to better foster interdisciplinary discussions and appreciation of alternative views, all to make a better environmental risk assessment. In my estimation, this is an opportunity lost and a lesson to be heeded in future external reviews.[180]

In sum, the peer review process cast significant doubt on the ultimate quality, utility, and scientific integrity of the Assessment. As a result, the Assessment lacks the credibility of a properly peer-reviewed study. In fact, the questions raised in the peer review process demonstrate that the study should not be relied upon to support a major regulatory decision such as a Section 404(c) veto. EPA scientists apparently agree, as they repeatedly stated that the Assessment is "not a decision document" in response to the peer review comments.[181] Instead, EPA should withdraw its premature initiation of the Section 404(c) process, and allow a full record to be developed under the CWA and NEPA based on a Pebble Mine permit application.

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The faulty peer review process and other shortcomings of the Assessment are perhaps not surprising when viewed in light of EPA's purpose – to provide a basis for a Section 404(c) veto. ***Before the Assessment process even began, personnel in EPA's Region 10 were requesting funds to initiate a veto.[182] According to the request, "While resorting to exercising EPA's 404(c) authority is rare (only 12 actions since 1981), the Bristol Bay case represents a clear and important need to do so given the nature and extent of the adverse impacts coupled with the immense quality and vulnerability of the fisheries resource."[183] EPA thus knew the intended end of the Assessment process even before initiating it.*** This predetermined result underscores the questionable value of the Assessment's conclusions, as well as its ability to serve as a foundation for a major regulatory decision.

IV. A Section 404(c) Veto Would Violate the Alaska Statehood Act and ANILCA

EPA's attempt to usurp the 404 process, before it has even begun, demonstrates that this veto process is not about a particular permit, but instead is based on EPA's broader goal of precluding development of the state lands in the Bristol Bay watershed. One internal EPA document even characterized the option of waiting for the permitting process for Pebble as a

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[180] *Id.* at 393.
[181] *See, e.g.*, Response to Peer Review Comments, at 35.
[182] Exhibit H, EPA, FY11 Proposed Investment: Bristol Bay 404(c).
[183] *Id.*

disadvantage because "only that project would be prohibited." [184] The document also expressed a goal of "proactive watershed planning."[185] These statements indicate a goal of a more expansive use of a Section 404(c) veto than authorized by any relevant statute. EPA is effectively precluding any development within a large swath of state land, which violates the statutory compromise established in the Alaska Statehood Act and ANILCA. Congress adopted both statutes to balance Alaska's economic interests in its land with environmental conservation efforts. EPA's reach beyond its statutory authority under Section 404(c) of the CWA is a blatant attempt to bypass Congress's explicit intent to prevent the federal government from usurping Alaska's interests.

A. The Alaska Statehood Act and Subsequent Corresponding Federal Legislation Preclude EPA from Vetoing the Pebble Project

The Alaska Statehood Act provides that the "State of Alaska . . . is hereby granted and shall be entitled . . . to public lands of the United States in Alaska".[186] Furthermore, "[a]ll grants made or confirmed under this Act shall include mineral deposits . . . . Mineral deposits in such lands shall be subject to lease by the State as the State legislature may direct."[187] Altogether, Alaska received over 103 million acres for the express purpose of developing natural resources to generate income for the State. The Pebble Project is located on such land that the federal government granted to Alaska under the Alaska Statehood Act.

Congress's intent to permit Alaska to use the lands it received from the United States to responsibly develop its natural resources, including mineral deposits, for future income is clear from the plain language of the Alaska Statehood Act. The land grant included mineral deposits, and Congress did not intend for the federal government to otherwise block those property rights. At least one court has recognized that "[o]f the various sources of future income [for the State], the most important source was seen [by Congress] as the land grant."[188] The key purpose of the land grants to Alaska "was to ensure the economic and social well-being of the new state."[189]

In an analogous line of cases, courts have held that when Congress has granted lands to a state for the purpose of funding schools, congressional intent is clear that the State must have a right of access to that land.[190] Here too, since Congress granted Alaska mineral rights to the land upon which the proposed Pebble Project sits, Alaska holds a right to develop those minerals. Congress's intent is clear that Alaska and its lessee should be allowed to develop the land and resources that the federal government granted to Alaska.

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[184] Exhibit A, Bristol Bay 404(c) Discussion Matrix, HQ Briefing, at 1 (Sept. 8, 2010).
[185] *Id.*
[186] Alaska Statehood Act, Pub. L. No. 85-508, 72 Stat. 339, § 6(b) (1958).
[187] *Id.* § 6(i).
[188] *Alaska v. United States*, 35 Fed. Cl. 685, 700 (1996).
[189] *Trustees for Alaska v. State*, 736 P.2d 324, 336 (Alaska 1987) (internal citation omitted).
[190] *See Utah v. Andrus*, 486 F. Supp. 995, 1001-02 (D. Utah 1979) (holding that the federal government could not block the state's guaranteed right of access to the land granted to the state under the Utah Enabling Act, as congressional intent was clear by enabling the state to use the lands in the first place); *Lyon v. Gila River Indian Cmty*, 626 F.3d 1059, 1072-73 (9th Cir. 2010) ("In granting lands to a state for the purpose of funding schools, the federal government must have intended some right of access to the land or the purpose of the land grants would fail.").

The Alaska Statehood Act precludes EPA from pre-emptively vetoing the project under Section 404(c). Under Section 6 of the Statehood Act, Alaska has the right to select lands suited for mineral development. A veto would effectively revoke that right. Doing so would run afoul of the principle, repeatedly recognized by the Supreme Court, that a state's property rights are essential attributes of sovereignty. In particular, the Court has "acknowledged congressional policy to dispose of sovereign lands *only* in the most unusual circumstances."[191] The CWA does not evince any congressional policy to authorize EPA to revoke Alaska's property rights under Section 6 of the Statehood Act. Although development on State lands is subject to federal regulation, there is no statutory justification for federal agency enactment of "proactive watershed planning for sustainability"[192] on Alaska's lands. In the absence of clear authorization from Congress, EPA does not have authority under Section 404(c) to disregard Alaska's Section 6 rights.

The State of Alaska has expressed concern about these rights. In a letter to EPA, the State's Attorney General stated,

> Deciding the 404(c) petition without the benefit of a project application and substantial, scientifically vetted project-specific information would infringe on the State of Alaska's management and use of State lands. The State selected lands with natural resource potential to provide for the economic welfare of the residents of Alaska. A premature decision would thwart those objectives, as established by both Congress in the Alaska Statehood Act and the Alaska Legislature in a myriad of state laws.[193]

A preemptive veto thus upsets the careful balance of State and federal interests.

A preemptive veto likewise violates the agreements established in the Alaska Native Claims Settlement Act ("ANCSA")[194] and the Cook Inlet Exchange. ANCSA authorized exchanges between for-profit Native corporations, the federal government, and the State to resolve land issues.[195] The Cook Inlet Exchange, codified as an amendment to ANCSA,[196] conveyed to Alaska the land on which PLP's mining claims are located as part of a broader exchange between the three parties. The ANCSA amendment specified that all lands granted under the Cook Inlet Exchange "shall be regarded for all purposes as if conveyed to the State under and pursuant to Section 6 of the Alaska Statehood Act."[197] The State of Alaska should be

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[191] *Utah Div. of State Lands v. United States*, 482 U.S. 193, 197 (1987) (emphasis added); *see Gregory v. Ashcroft*, 501 U.S. 452, 460-61 (1991) (holding that Congress "must make its intention" to burden state sovereign rights "unmistakably clear" (internal citation and quotation omitted)).
[192] Exhibit A, Bristol Bay 404(c) Discussion Matrix, HQ Briefing, at 1 (Sept. 8, 2010).
[193] Letter from Michael C. Geraghty, Attorney General, State of Alaska, to Dennis McLerran, Regional Administrator, EPA Region X, at 3 (Mar. 9, 2012).
[194] 43 U.S.C. § 1601 *et seq.*
[195] 43 U.S.C. § 1621(f).
[196] *See* Pub. L. No. 94-204, 89 Stat. 1145 (1976).
[197] 43 U.S.C. § 1611 (note).

free to use the minerals for the lands on which the Pebble claims are located because "[m]ineral deposits in such lands shall be subject to lease by the State as the State legislature may direct."[198]

B. A Section 404(c) Veto Violates the Policy and Spirit of ANILCA

A pre-emptive Section 404(c) veto likewise violates the public policy of the Alaska National Interest Lands Conservation Act ("ANILCA") of balancing conservation with Alaska's economic and social needs, and is further evidence of Congress's intent not to permit EPA to usurp Alaska's property rights.[199] ANILCA was enacted to resolve any remaining disputes regarding the federal government's interest in Alaskan land conservation after the Alaska Statehood Act. The statute thus codifies the policy of balancing federal conservation and state revenue interests.[200]

Section 1326(a) of ANILCA limits the federal government's ability to withdraw additional public lands by requiring a thorough process involving Congress's specific approval of any withdrawal.[201] This is commonly referred to as ANILCA's "no-more" clause. A Section 404(c) veto of the project may not seem like a conventional withdrawal, but the effect would be the same. EPA is threatening to exert federal authority under Section 404(c) to remove tracts of Alaska's land for conservation, without Congress's explicit approval.[202] Such an action would upset the balance ANILCA has established between preserving lands and using those lands for a "more intensive use and disposition" by denying the State of Alaska the economic benefits of mineral benefits on its own lands.

While the "no-more" clause defines "public lands" as federal land,[203] a withdrawal of state land nonetheless violates the spirit and intent of public policy behind the enactment of ANILCA. Congress likely did not include an explicit bar on state land withdrawals only because that scenario had not arisen. Instead, Congress created a meticulous and cumbersome process through the "no-more" clause for federal land withdrawals to ensure that Alaska's rights were

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[198] Alaska Statehood Act § 6(i).

[199] Alaska National Interest Lands Conservation Act (ANILCA), 94 Stat. 2371 (Dec. 2, 1980), codified at 16 U.S.C. § 3101 *et seq.*

[200] ANILCA describes its purpose accordingly:

> This Act provides sufficient protection for the national interest in the scenic, natural, cultural and environmental values on the public lands in Alaska, and at the same time provides adequate opportunity for satisfaction of the economic and social needs of the State of Alaska and its people; accordingly, the designation and disposition of the public lands in Alaska pursuant to this Act are found to represent a proper balance between the preservation of national conservation system units and those public lands necessary and appropriate for more intensive use and disposition, and thus Congress believes that the need for future legislation designating new conservation system units, new national conservation areas, or new national recreation areas, has been obviated thereby.

16 U.S.C. § 3101(d).

[201] *Id.* § 3213(a).

[202] *See, e.g.*, *Pac. Legal Found. v. Watt*, 529 F. Supp. 982, 997 (D. Mont. 1981) (finding "no traditional definition of 'withdrawal'" under Federal Land Policy and Management Act inconsistent with declaring a withdrawal an executive action that removed land from disposition of mineral leasing laws).

[203] 16 U.S.C. § 3102(3).

protected. ANILCA's legislative history indicates the policy of the law is to protect Alaska's ability to generate revenue from its lands, as first granted under the Alaska Statehood Act.[204]

Similarly, Section 1326(b) of ANILCA prohibits the further study of federal lands in Alaska for the single purpose of considering conservation efforts without explicit congressional approval.[205] Congress did not even permit the federal government to study federal lands in Alaska if the ultimate goal was conservation, without congressional authorization. Certainly, Congress did not intend for land owned by the State to have fewer protections from federal involvement in conservation studies than federal land.

Here, under a contrary interpretation, the State of Alaska would not receive the same protections simply because the federal government granted to the State of Alaska the land at issue. The federal government cannot make an end-run around protections that ANILCA provides to Alaska simply by granting that land to Alaska first. Moreover, a restraint on EPA's authority to initiate a Section 404(c) veto under the CWA again circumvents the spirit and intent of ANILCA by withdrawing Alaska's lands for federal conservation efforts without clear congressional approval.

V. The Harms of a Preemptive Veto Greatly Outweigh EPA's Stated Benefits

A Section 404(c) preemptive veto is wholly premature and unnecessary, given that EPA retains its veto authority after a permit application is submitted and an EIS has been completed. As outlined above, EPA will be able to participate in the EIS and CWA review processes well before any mine development activities could proceed. Therefore, no harm to the environment will occur should EPA follow the proper permitting process for this project--waiting for an application, the Corps' review, and an EIS.

Moreover, as outlined above, EPA cannot initiate a science-based assessment of the impact of the proposed Pebble Project on the Bristol Bay watershed until the sponsors of Pebble Mine submit a permit application reflecting the specific scope and characteristics of the project. A Pebble Project permit application would provide a specific project location and important project details such as fill materials, aquatic resource impacts, and project- and site-specific mitigation. The NEPA process may address many of EPA's stated concerns about the potential environmental impacts. By waiting for more detailed information before vetoing or placing restrictions on mineral development, EPA loses nothing.

On the other hand, moving forward with a preemptive 404(c) process will have far-reaching impacts on this project, the local economy, and future development subject to the 404 permitting process.

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[204] *See, e.g.*, S. Rep. No. 96-413, 96th Cong., 1st Sess. 129 (1979) ("By transferring title over validly selected lands to . . . the State of Alaska, the bill goes far toward letting people know where they stand and giving Alaska and its citizens a means of shaping their own future.").

[205] 16 U.S.C. § 3213(b) ("No further studies of Federal lands in the State of Alaska for the single purpose of considering the establishment of a conservation system unit, national recreation area, national conservation areas or for related or similar purposes shall be conducted unless authorized by this Act or further Act of Congress.").

A. The Mere Threat of Initiating the Section 404(c) Process has Harmed the Pebble Project and the Local Economy

EPA's Assessment has caused demonstrable harm to Northern Dynasty Minerals Ltd. ("NDM"), the principal owner of PLP, and NDM's investors. On February 7, 2011, when EPA initiated an ecological risk assessment to evaluate all current and future development in the Bristol Bay region and its potential impacts on the region's fisheries, it emphasized that the Assessment would be a fact and science based study. However, as discussed above, it became clear during the Assessment process that EPA intended the Assessment to be a means to achieve a pre-determined result – to support a 404(c) veto of the Pebble Project. Rather than bringing an attitude of impartiality to the regulatory process, EPA was transparent in its intent to stop the Pebble Project, which in turn significantly harmed NDM and its shareholders, the majority of whom are US-based financial institutions and individual shareholders.

To quantify the damage to NDM investors, we have compared NDM's share price performance over the Assessment process period with the performance of a representative index of stocks in the mining sub-sector. Such an index of primarily base metal and gold mining stocks in Canada is the S&P/TSX Materials Index ("STMATR" Index). On the day the Assessment was announced in 2011, the NDM share price closed on the New York Stock Exchange at $USD 21.08. NDM had 94,595,555 shares outstanding, so the market capitalization of NDM on that day was $USD 1,994,074,299.00. On February 7, 2011 the closing value of the STMATR index was 4030.46.

On Monday April 21, 2014 the share price for NDM closed on the New York Stock Exchange at $USD 0.83, so NDM's current market capitalization is $USD 78,858,187 (95,009,864 current shares outstanding x 0.83). On April 21, 2014 the STMATR Index closed at 2221.12.

Therefore, an objective measure for the value destroyed by EPA under the cloud of uncertainty caused by the Assessment process is calculated by comparing the relative underperformance of NDM versus the STMATR Index over this period. From February 7, 2011 until April 21, 2014 ***absolute*** NDM value erosion is equal to $USD 1,915,216,112 ($1,994,074,299 – 78,858,187). This is an absolute decline of 96.05%. During the same time period the STMATR index declined by 44.89% (<4030.46 – 2221.12>/4030.46). We believe the very significant underperformance of NDM (96.05% – 44.89% = 51.16%) versus the Index can be entirely attributed to the ill-effects of EPA's clear intent to use the Assessment to veto the Pebble Project. ***Accordingly, $ USD 979,824,562 in value was destroyed by EPA's initiation of the Assessment process*** ($1,915,216,112 x 0.5116).

Moreover, the impact of the EPA Assessment process on investors is evidenced by investor reaction to two specific EPA actions. First, on ***May 18, 2012*** EPA released the first draft of Assessment. This draft was the first tangible evidence of EPA's anti-Pebble agenda. On Monday May 21, the Toronto Stock Exchange was closed for Victoria Day holiday. On Tuesday May 22 NDM shares closed on the New York Stock Exchange at $USD 2.56 compared with its closing price of $USD 3.86 on May 18. This represents a share ***price decline of 33.7%*** - a direct response by investors to the EPA draft.

More recently, there was swift and violent reaction following EPA's ***February 28th, 2014*** letter initiating the 404(c) process. That day, February 28th, in advance of the EPA news release, NDM opened on the New York Stock Exchange at $USD 1.48 per share. That afternoon the share price went into free-fall following EPA's news release announcing the beginning of the 404(c) process. Investor selling that afternoon caused the stock to trade as low as $0.97 and to close at $1.05, ***a decline of 29.5%*** compared with the closing price on February 27th.

EPA's steps towards initiating a 404(c) action have also substantially contributed to the departure of key ownership interests in the Pebble Project – global mining companies Anglo American plc ("Anglo") and Rio Tinto plc ("Rio"). Both Anglo and Rio were fundamentally influenced in their decisions by EPA's actions and the efforts and funding that would be required to respond to EPA's and the environmental organizations' concerted campaign against the Project. Investors have been similarly quick to react to the news of the departure of both Anglo and Rio from their respective direct and indirect investments in Pebble. On ***September 16, 2013,*** the day Anglo announced their intention to withdraw from Pebble Limited Partnership, ***NDM shares declined 32.9%*** in a single day; and on ***December 23, 2013,*** when Rio announced that they were putting their investment in NDM shares into a "strategic review process", ***NDM shares declined 17.8%***.

In sum, EPA's transparent efforts to stop the Pebble Project, without providing a fair and full permitting process, have significantly harmed NDM and its shareholders. Investors understand the risks and costs of legitimate environmental regulation and permitting that proceeds according to law under established procedures. However, investors should not have to face the risk of a federal regulator actively campaigning in concert with environmental activists to oppose a project before an applicant has an opportunity to propose a specific project or to demonstrate its ability to meet the regulatory criteria.

The departure of Anglo American from the Pebble Partnership has also had unfortunate ripple effects, including significant layoffs for direct workers in Anchorage and at PLP's site operation in Iliamna. There was also a significant scaling back of contracted work, which in turn led many PLP contractors to lay off personnel.

The Lake and Peninsula Borough commissioned consultant Bob Loeffler of Jade North LLC to provide an assessment of the economic effect of the Anglo American departure. Loeffler estimated that through August of 2013, there were 103 people from the Bristol Bay Region who had worked in some way at Pebble, with 76 from seven villages in the Borough (Igiugig, Iliamna, Kokhanok, Newhalen, Nondalton, Pedro Bay, and Port Alsworth).[206] Loeffler estimated that this was the equivalent of 34 full-time jobs for Borough residents.

Loeffler further analyzed the economic impact of Pebble employment to the region and calculated, conservatively, that Pebble's exploration accounted for 20%-30% of the wage income for communities in the Lakes Region in 2012. For the four villages that supplied the most employees to Pebble (Iliamna, Newhalen, Nondalton, and Kokhanok), Loeffler estimated that Pebble's 2012 wages may have represented 20%-40% of all wages for those villages. Loeffler

[206] Exhibit I, Memorandum from Bob Loeffler (Jade North LLC) to Lake and Peninsula Borough Assembly (Nov. 17, 2013).

concluded that the effect of Pebble's exploration is "significantly greater than that of commercial fishing for the Lakes Region villages."[207]

PLP had dramatic layoffs in the fall of 2013 and significantly scaled back its Alaska operations. This has included a reduction in spending for charitable purposes and direct spending in the Bristol Bay Region. While the company actively seeks additional investment to advance the project to permitting, there is no question the uncertainty created by the EPA's unprecedented action against the project has had an economic impact on the residents of the Lake Area communities and on Alaska's economy.

B. The Pebble Project Would Have Substantial Benefits for Local and State Economies

The Pebble Project would provide a much needed boost to struggling local communities. According to recent Alaska Department of Commerce figures, 37% of the working-age population in the potential mine's area were unemployed, and only 35% of those working were employed for all four quarters of 2011.[208] In 2014, the Anchorage School District has already had to lay off around 200 employees.[209] Lake and Peninsula Borough has seen multiple school closures in recent years as residents move away in search of full-time employment (population declined 17% between 2000 and 2010 Census dates).[210]

Local citizens are hopeful about the opportunities the project presents. As one local politician stated, "The tax revenue could help the school district with money for new schools, help growing schools stay open, and overall allow local governments to invest in capital projects that they've put off for lack of resources."[211] The politician's optimism is well-founded; the Pebble Mine will provide the State with $136-$180 million in annual tax revenue and Lake and Peninsula Borough with $29-$33 million.[212] Pebble tax payments to Lake and Peninsula Borough would increase their tax base by some 600% per annum, paying for additional schools, health facilities and other community infrastructure. The Pebble Mine will also improve local employment by supporting approximately 4,725 jobs in Alaska during the construction phase and 2,900 jobs during the mine's production phase.[213] The project could contribute $400 million per year to Alaska's gross state product during construction and up to $1.4 billion annually

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[207] *Id.* Loeffler also noted that Pebble paid $11 million to Anchorage-based village contractors and also paid $2.7 million to other contractors – mostly air service operators – based in the villages. *Id.* at 3.
[208] *See* IHS, "The Economic and Employment Contributions of a Conceptual Pebble Mine to the Alaska and United States Economies," at 20 (May 2013) (citing Alaska Department of Commerce, Community, and Economic Development Division of Community & Regional Affairs, Research and Analysis Section, Alaska Community Database Community Information Summaries).
[209] Michelle Therialt Boots, *As Anchorage School District prepares for layoffs, a look at how it got $23 million in the red*, Anchorage Daily News (Jan. 20, 2014), *available at* http://www.adn.com/2014/01/20/3283259/as-school-district-prepares-for.html#storylink=cpy.
[210] *See* Alaska Dep't of Labor, Alaska Economic Trends, at 7 (Apr. 2013), *available at* http://labor.alaska.gov/trends/trends2013.htm.
[211] *Id.* at 23.
[212] *Id.* at 25.
[213] *Id.* at 25.

thereafter.[214] A veto before a full permit application review, including consideration of socioeconomic impacts, would be unsupportable and unforgiveable.[215]

C. The Preemptive Initiation of a 404(c) Action Will Deter Investment in Other Major Projects

EPA's preemptive action will also establish a precedent that will substantially deter investment in other major projects requiring Section 404 permits, potentially resulting in enormous impacts to the U.S. economy. EPA's ability to preemptively veto projects before a permit application is even filed will cause developers to distrust the entire Section 404 permitting process. The preemptive veto of a permit creates significant regulatory uncertainty for all major projects that require Section 404 permits. Development companies and investors understand the risks of legitimate environmental regulation and permitting, and that some permits will be difficult or even impossible to obtain. However, investors expect the permitting process to be followed, so that a project has a full opportunity to present its plans, defend its science, and modify the project to meet any legitimate regulatory concerns. The financial risk of backing a project that requires a Section 404 permit is significantly increased if a possibility exists that a project could be vetoed by EPA even before an applicant has an opportunity to propose a specific project or to demonstrate its ability to meet the CWA criteria. The potential harm resulting from decreased domestic and foreign investment is significant: the Corps processes approximately 60,000 permits a year, and, according to some estimates, roughly $220 billion of investment per year depends on these permits.[216] EPA should respect the permitting process that Congress established, as to usurp the Corps' (and State's) role here will only serve to undermine the legitimacy and predictability of the Section 404 permitting process.

D. There is No Benefit to Initiating the Section 404(c) Process Now

Finally, EPA's professed reason for initiating the Section 404(c) process now – to provide certainty to the Alaska Native communities and the fishing industry – is misleading. If EPA pursues a preemptive veto, it is virtually certain that litigation will ensue over the legality of such unprecedented action. Thus, rather than providing certainty, a preemptive veto would simply lead to protracted litigation. If EPA's goal is certainty, it should follow the permitting and environmental review process required by the CWA and NEPA. The Corps' Section 404 review process, and the associated NEPA review, will provide a full record on the scope and potential impacts of the project, including mitigation, with opportunities for EPA and public input. The only way to provide finality and certainty regarding this project is to allow this permitting process to proceed and to allow the permit-specific record to develop. Short-circuiting this regulatory process only raises legal questions that throw the entire process into doubt.

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[214] *Id.*

[215] Moreover, the economic benefits of the Project are not limited to Alaska's economy; the Project could support approximately 12,000 jobs outside Alaska and contribute over $2.5 billion to the annual gross domestic product. IHS Study, at 26.

[216] *See* David Sunding, *Economic Incentive Effects of EPA's After-the-Fact Veto of a Section 404 Discharge Permit to Arch Coal*, at 1 (May 2011).

Conclusion

As outlined above, initiating a preemptive veto process will short-circuit many of the important checks and balances included in the Section 404 permit review process, including the State's certification under Section 401 and the Corps' NEPA review process. EPA should immediately rescind its letter initiating the Section 404(c) veto process. The Agency has provided no rationale for usurping the Corps and State's regulatory role, and acting preemptively suggests that EPA does not trust the State or Corps to adequately review the project and protect aquatic resources.

Proceeding with the Section 404(c) process now will mean the determination will be based instead primarily on the Assessment. Yet the Assessment does not provide a legitimate basis for determining that the Pebble Project presents an unreasonable risk to the Bristol Bay Watershed because it assesses only unrealistic, speculative mine development scenarios and does not quantify any risks to "fisheries, shellfishing, or wildlife habitat or recreation areas."[217] The aquatic habitat effects predicted in the Assessment are greatly exaggerated based on the following factors:

- PLP has not yet submitted a proposed development plan for Pebble, such that both the mine scenarios presented in the Assessment and their projected impacts on aquatic habitat are speculative;
- Mine scenarios in the Assessment do not employ modern mine engineering and environmental management practices and approaches;
- The Assessment entirely ignores the effect of compensatory mitigation to offset unavoidable impacts to aquatic habitat and wetlands; and
- The scientific inputs used and analyses undertaken in the Assessment are of substantially lower quality, less comprehensive and less definitive than the scientific inputs and analyses to be undertaken by the Corps and other regulatory agencies as part of an EIS process under NEPA.

The Assessment thus does not prove unacceptable adverse effects to aquatic resources. By EPA's own admission, the Assessment was never intended as a decision document for a regulatory decision. Moreover, the flaws pointed out in the peer review process demonstrate that the Assessment is of questionable scientific value.

These problems can be avoided if EPA awaits a permit application and an EIS, and takes any action based on that permit-specific record rather than the Assessment. There is no risk of environmental harm in waiting. As outlined above, there are numerous permitting and legal obstacles that must be met before a mine can begin construction or become operational. Accordingly, to comply with the spirit and letter of the CWA and NEPA, EPA should follow past precedent and allow a Section 404 permit application to be submitted and reviewed, including under NEPA's EIS process, before determining whether Section 404(c) will be triggered for the Pebble Project.

[217] 40 C.F.R. § 231.2(e).

If given the opportunity to propose a specific project to the Corps and work with the Corps and EPA on mitigation, the Pebble Limited Partnership will demonstrate that the Pebble Project is of considerable merit and can coexist with clean water, healthy fish, and traditional ways of life in the Bristol Bay region, while making a valuable contribution to a more sustainable future for the region's communities and Alaska Native culture.

Respectfully submitted,

Thomas Collier
Chief Executive Officer
Pebble Limited Partnership

List of Exhibits

A. EPA, Bristol Bay 404(c) Discussion Matrix, HQ Briefing (Sept. 8, 2010).

B. Letter from Michael C. Geraghty, Attorney General, State of Alaska, to Arthur A. Elkins, Jr., Inspector General, EPA (Feb. 3, 2014).

C. Memorandum from Ecofish Research, Ltd., to Bruce Jenkins, *Literature Review of Successes and Efficacy of Fish Habitat Restoration and Compensation Projects in British Columbia* (Apr. 25, 2014).

D. J.W. Buell, Ph.D., & R.E. Bailey, M.S., *Mitigation and EPA's Bristol Bay Watershed Assessment Final Assessment* (Apr. 23, 2014).

E. Letter from Jason Quigley, Hunter Dickinson, Inc., to Dennis McLerran, Regional Administrator, EPA (Apr. 28, 2014).

F. Letter from Richard E. Schwartz, Attorney for Northern Dynasty Minerals Ltd. to Arthur A. Elkins, Jr. Inspector General, EPA (Jan. 9, 2014).

G. Letter from Richard E. Schwartz, Attorney for Northern Dynasty Minerals Ltd. to Arthur A. Elkins, Jr. Inspector General, EPA (March 19, 2014).

H. EPA, FY11 Proposed Investment: Bristol Bay 404(c).

I. Memorandum from Bob Loeffler to Nathan Hill, Manager, Lake and Peninsula Borough Assembly, *Economic Effects of Anglo's Pullout* (Nov. 17, 2013).

J. Memorandum from Cathy Safadi, Knight Piesold Consulting, to Bruce Jenkins, *Response to Final EPA BBWA Report: Leachate from Mine Facilities* (Apr. 23, 2014).

K. Memorandum from Dan Friedman, Knight Piesold Consulting, to Bruce Jenkins, *Tailings Dam Failure – Related Technical Support for NDM's Response to Final EPA BBWA* (Apr. 23, 2014).